THE

# MONTHLY REVIEW,

## For DECEMBER, 1786.

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ART. I. *Dr. Rees's Edition of Chambers's Dictionary*, concluded. See our laſt Month's Review.

THOUGH the Editor of this extenſive work has not been able to advance much on the theory of mechanics, *that* having been ſufficiently eſtabliſhed before, he has ſpared neither attention nor labour, to communicate every new invention that later years have produced; among theſe we may rank the ſteam engine, invented by Boulton and Watt. The great conſumption of fuel, by the common or Newcomen's ſteam engine, is attended with a conſiderable expence, not leſs than 3000 *l. per annum* for one of an ordinary ſize; and ſeveral means have been thought of to conſtruct theſe machines in ſuch a manner as to ſave fuel. For this purpoſe, the fire-place has been diminiſhed;—the flame has been carried round the boiler in a ſpiral direction;—double boilers have been uſed, ſo that the fire might act in every poſſible point of contact; but theſe, and other contrivances, have been all found inſufficient to produce the deſired effect.

Mr. Watt's invention being different from any thing of the kind, Dr. Rees endeavours to give ſome account of it; premiſing that its internal ſtructure ſo much reſembles that of the common engines, that thoſe who are acquainted with them will eaſily underſtand the mechaniſm of this. Mr. Watt has contrived to preſerve a uniform heat in the cylinder, by ſuffering no cold water to touch it, and by protecting it from the air, or other cold bodies, by a ſurrounding caſe filled with ſteam, or with hot air or water, and by coating it over with ſuch ſubſtances as tranſmit heat ſlowly. He makes his vacuum by condenſing the ſteam in a ſeparate veſſel, called the condenſer, which may be cooled at pleaſure, without cooling the cylinder, either by an injection of cold water, or by ſurrounding the condenſer with it; and generally by both. He extracts the injection water, and detached air, from the cylinder or condenſer by pumps which are wrought by the engine itſelf, or blows them out by the ſteam. As the entrance of air into the cylinder would ſtop the operation of the engines, and as it is hardly to be expected that ſuch enor-

mous piſtons as thoſe of ſteam engines, can be made to move up and down and yet be abſolutely air-tight; a ſtream of water has been uſually kept running upon the piſton, to prevent the entry of the air: but this mode of ſecuring the piſton, though not hurtful in the common ones, would be highly prejudicial in the new engines. Their piſton is therefore made to fit more accurately: the outward cylinder having a lid that covers it, the ſteam is introduced above the piſton, and, when a vacuum is produced below, it acts upon the top of the piſton by its elaſticity, as the atmoſphere does upon common engines by its gravity. This way of working effectually excludes the air from the inner cylinder, and gives the advantage of adding to the power, by increaſing the elaſticity of the ſteam. But to give our Readers a more juſt idea, we ſhall lay before them Dr. Rees's own deſcription:

'In Mr. Watt's engines, the cylinder, the great beams, the pumps, &c. ſtand in their uſual poſitions. The cylinder is ſmaller than uſual in proportion to the load, and is very accurately bored. In the moſt complete engines, it is ſurrounded at a ſmall diſtance with another cylinder, furniſhed with a bottom and a lid. The interſtice between the cylinders communicates with the boiler by a large pipe, open at both ends; ſo that it is always filled with ſteam, and thereby maintains the inner cylinder always of the ſame heat with the ſteam, and prevents any condenſation within it, which would be more detrimental than an equal condenſation in the outer one. The inner cylinder has a bottom and piſton as uſual: and as it does not reach up quite to the lid of the outer cylinder, the ſteam in the interſtice has always free acceſs to the upper ſide of the piſton. The lid of the outer cylinder has a hole in its middle; and the piſton rod, which is truly cylindrical, moves up and down through that hole, which is kept ſteam-tight by a collar of oakum ſcrewed down upon it. At the bottom of the inner cylinder, there are two regulating valves, one of which admits the ſteam to paſs from the interſtice into the inner cylinder below the piſton, or ſhuts it out at pleaſure: the other opens or ſhuts the end of a pipe, which leads to the condenſer. The condenſer conſiſts of one or more pumps furniſhed with clacks and buckets (nearly the ſame as in common pumps), which are wrought by chains faſtened to the great working beam of the engine. The pipe, which comes from the cylinder, is joined to the bottom of theſe pumps, and the whole condenſer ſtands immerſed in a ciſtern of cold water ſupplied by the engine. The place of this ciſtern is either within the houſe under the floor, between the cylinder and the lever wall; or without the houſe, between that wall and the engine ſhaft, as conveniency may require. The condenſer being exhauſted of air by blowing, and both the cylinders being filled with ſteam, the regulating valve, which admits the ſteam into the inner cylinder, is ſhut, and the other regulator, which communicates with the condenſer, is opened, and the ſteam ruſhes into the vacuum of the condenſer with violence; but there it comes into contact with the cold ſides of the pumps and pipe, and meets a jet of cold water, which was opened at the ſame time with the exhauſtion regulator; theſe inſtantly deprive

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deprive it of its heat, and reduce it to water, and the vacuum remaining perfect, more ſteam continues to ruſh in and be condenſed until the inner cylinder is exhauſted. Then the ſteam which is above the piſton, ceaſing to be counteracted by that which was below it, acts upon the piſton with its whole elaſticity, and forces it to deſcend to the bottom of the cylinder, and ſo raiſes the buckets of the pumps which are hung to the other end of the beam. The exhauſtion regulator is now ſhut, and the ſteam one opened again, which, by letting in the ſteam, allows the piſton to be pulled up by the ſuperior weight of the pump rods; and ſo the engine is ready for another ſtroke.'

From this account it is evident that theſe engines are in many reſpects ſuperior to the old ones. The great advantage of them in ſaving fuel can be determined only by practice. From good authority it appears, that the ſavings amount to at leaſt two thirds, which is a very important object, eſpecially where coals are dear.

In treating on mechanics, the Editor recommends to engineers the conſideration of the proportion of the power and weight to each other, in order to produce, in a given machine, the greateſt poſſible effect, in a given time. It is apparent, that this is an inquiry of the greateſt importance, though few have noticed it. When the power is only a little greater than what is ſufficient to ſuſtain the weight, the motion is too ſlow; and though a greater weight is raiſed in this caſe, it is not ſufficient to compenſate for the loſs of time. When the weight is much leſs than that which the power is able to ſuſtain, it is raiſed in leſs time, and this may happen not to be ſufficient to compenſate for the loſs ariſing from the ſmallneſs of the load. It ought therefore to be determined when the product of the weight and its velocity is the greateſt poſſible; for this product juſtly meaſures the effect of the engine in a given time, which is always in the compound ratio of the weight and its velocity. The ingenious Editor inveſtigates this problem with great attention, and wiſhes that farther improvements might be made in this moſt uſeful part of mechanics.

Accurate deſcriptions, and draughts of various machines, and engines, would be a very curious as well as uſeful work. In this reſpect Dr. Rees has not followed the plan of the foreign *Encyclopedie*. The Editors of that Dictionary have crowded their work with a number of ſlight deſcriptions of the moſt unintereſting machines that have been invented. To make a collection of this kind as advantageous as poſſible, it ſhould contain, beſide the deſcriptions of machines, an analyſis of them, pointing out their advantages and diſadvantages, with the reſpective reaſons for their conſtruction; and the general problems, implied in each conſtruction, with their ſolutions, ſhould be extracted. None of theſe things have as yet been done, in a

complete and ſatisfactory manner, in any treatiſe on mechanics, or in any of the many Dictionaries of Arts, &c. that have been publiſhed. The Royal Academy of Sciences at Paris have indeed given us a collection of machines and inventions approved by them: this work, publiſhed by M. Gallon, conſiſts of ſix large quarto volumes, containing engraved draughts of the machines, with their deſcriptions annexed: but a complete inſtitution of practical mechanics is ſtill wanting. The beſt model for ſuch a work is Emmerſon's firſt edition of his Mechanics; let no one however undertake this arduous taſk whoſe mathematical knowledge is in any reſpect incomplete.

The doctrines of Annuities, Reverſions, Expectations, Aſſurance, &c. are peculiarly attended to by Dr. Rees, who has taken great pains with this ſubject. He has given every thing that preceding writers had ſaid, and made a judicious extract of the material tables which each of them have furniſhed. Beſide what has been publiſhed on theſe ſubjects, ſeveral *new* articles are added that greatly enrich the preſent performance; theſe are chiefly, as we learn by the Preface, the work of Dr. Price, whoſe aſſiſtance the Editor gratefully acknowledges.

Contingent reverſions, or thoſe whoſe titles to them depend on any contingency, as the ſurvivorſhip of any life or lives beyond other lives, form the moſt intricate and difficult part of this doctrine. The books in which this ſubject is treated moſt at large, and at the ſame time with the utmoſt preciſion, are Simpſon's Select Exerciſes, Morgan on Annuities, and Price on Reverſionary Payments; but the Editor cannot admit of De Moivre, becauſe of his adopting the hypotheſis of an equal decrement of life through all its ſtages, which not correſponding well with facts, cannot afford rules ſufficiently correct. In the table framed by Dr. Halley, from the bills of mortality at Breſlau in Sileſia, it may be obſerved that the numbers dying every year out of a given number born, continue, in the middle ſtages of life, nearly the ſame, for many years together. It was this circumſtance that led De Moivre to form his hypotheſis of an equal decrement of life through all its ſtages after ten years. In this hypotheſis the limit or utmoſt probable extent of life is fixed to the age of 86; and out of any number living at a given age, an equal number is reckoned to die every year, till at 86 all the lives become extinct. For inſtance, if there are 76 perſons living at 10, one of them will die annually during the term of 76 years, at the end of which time the laſt ſurviving life will have failed. Now, in the firſt and laſt ſtages of life, this hypotheſis differs too much from fact, as may eaſily be ſeen by tables formed from real obſervations. The rejection of it indeed renders calculations of the values of lives, eſpecially joint lives, a work of more labour and difficulty; but there is an eaſy theorem given by Dr. Price

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that removes much of this labour. After giving an account of this theorem, and the application of it to the calculations of the values of *joint lives*, the Editor proceeds with an account of the general principles on which the values of life annuities are calculated. Whoever will conſult this part of the performance before us, will be abundantly inſtructed in the beſt and moſt expeditious methods of making all calculations of this ſort: what renders it alſo the more valuable, is the very great collection of tables with which it abounds. One objection, however, we muſt make to the method in which theſe tables are inſerted. The Editor has placed them in different parts of the Dictionary, under the words *Aſſurance*, *Annuities*, *Expectations*, *Lives*, *Survivorſhip*, *Reverſions*, &c What renders this arrangement inconvenient, is the connection which theſe articles have with each other; the reader is referred backward and forward from one to the other, continually. This circumſtance is the more diſadvantageous, as the references are made from one volume to another. We could have wiſhed them to have been inſerted all together in one place; and indeed the whole doctrine might have been delivered under one article, as *Annuities*, and references made to it from the reſt, for all theſe ſubjects are very intimately connected.

Under the word *Aſſurance*, the Editor highly extols the plan of the EQUITABLE *Society for Aſſurances on Lives and Survivorſhips*, inſtituted 1762, which meet near Blackfriars Bridge. It aſſures any ſums or reverſionary annuities, on any life or lives, for any number of years, as well as for the whole continuance of the lives, and in any manner that may be beſt adapted to the views of the perſons aſſured. This ſociety, the Editor informs us, lately made a particular inquiry into its own ſtate, as to profit and loſs, by all the buſineſs it has tranſacted from its firſt inſtitution, and has found 'that it has for many years been enjoying an income of ſome thouſands *per ann.* greater than it wants, and a ſurplus ſtock of near 40,000*l.* over and above what is neceſſary to enable it to make good all its engagements.'

De Moivre has furniſhed ample matter on the ſubject of gaming, which the Editor has adopted: theſe curious inveſtigations, though in themſelves of no great utility, are nevertheleſs entertaining, as they comprehend much ſtrict mathematical reaſoning.

Chemiſtry, or as we have it in this work Chymiſtry, (critics are divided as to the etymology of this word, ſome deriving it from the Greek χεειν, to melt, whence *chemiſtry*; others from χυμος, juice, whence *chymiſtry*; others from the Egyptian *chema*, or *kema*, black, whence *chemiſtry*; others from the Hebrew חם, heat, or the proper name, making Ham or Cham, the inventor of the art) has received great and material improve-

ments in later years. To theſe the Editor has been very attentive. His hiſtory of the diſcoveries relative to the different Airs, is, we believe, not to be met with, in ſuch circumſtantial detail, in any other work. An elementary treatiſe on this ſubject is at preſent much wanted; the definitions of the new terms, the deſcription of every apparatus, and the method of procuring the ſeveral airs, are diſperſed through the accounts that the inventors have given of their labours, not only in their own valuable works, but even in various parts of the Acts, Tranſactions, and Journals of moſt of the learned ſocieties in Europe. Theſe, if collected in a ſmall compaſs, would certainly prove very acceptable; and Dr. Rees has, in the great work before us, given an excellent model for others to copy. The doctrine of Affinities hath engaged the attention of chemiſts for ſeveral years, and it has lately been carried to a very great length by many of our principal philoſophers of the preſent time. We were a little diſappointed in ſeeing the immenſe labours of that truly great chemiſt, Bergman, on this ſubject, paſſed over in total ſilence. His tables of affinities are ſo vaſtly ſuperior to thoſe of Geoffroy and Gellert, that the inſertion of them would have been a very conſiderable addition to this article. The doctrine of Affinities being the foundation of all analyſis, could not in our opinion have been too much inſiſted on. But *omnia non poſſumus omnes*; and we are aſtoniſhed how Dr. Rees has done ſo much as he has.

In the attraction of coheſion we find a miſtake that we cannot help noticing. The adhering of two poliſhed plates of marble or braſs, with a little oil to fill up the pores in their ſurfaces, and prevent the lodgment of the air, is attributed to a falſe cauſe. It is by the preſſure of the *atmoſphere alone* that this adheſion is effected; and the attraction of coheſion has nothing to do in the matter. If the oil uſed in this experiment be very tenacious or gluey, the plates may hang together in a vacuum; but if the oil be fine, or if water be uſed in its ſtead, the weight of a few ounces, nay the weight even of the plate itſelf, will be ſufficient to ſeparate them, and before a complete vacuum is made, the under plate will fall; as we have frequently found in our own experiments. But Dr. Rees is not ſingular in this hypotheſis: many Cambridge gentlemen are of his opinion.—That the preſſure of the atmoſphere is the only cauſe of the adheſion of the plates, is evident from another circumſtance, namely, that they will ſeparate if a weight be applied which is a little greater than, or even equal to, the weight of the preſſure of the atmoſphere upon their ſurface, *viz.* 15 pounds to every ſquare inch.

Of the Barometer, Dr. Rees treats very largely, and gives a particular account of the improvements that have been made in that inſtrument, eſpecially when it is uſed to determine the heights of mountains, &c. The various conſtructions of theſe

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inſtruments are minutely deſcribed, and proper directions are given for the mode of filling, fixing them, &c. ſo as beſt to ſuit the ſeveral purpoſes for which they are intended.

On Aeroſtation, notwithſtanding the novelty of the diſcovery, the Editor has collected every thing of note that has been written on the ſubject. We received much real information as well as pleaſure from the peruſal of the hiſtory of theſe atmoſpherical voyages and travels. The uſes of an art ſo lately introduced to our acquaintance, have not yet been ſufficiently aſcertained, but we find many ſuggeſtions of the advantages that may be derived from it, and the œconomical and philoſophical purpoſes to which it may be applied.

The *mechanical* Arts are no leſs attended to by Dr. Rees than thoſe which are ſtyled *liberal*; he has in this edition conſiderably increaſed the articles *Agriculture*, *Architecture*, *Baking*, *Brewing*, *Carpentry*, *Dying*, *Tanning*, *Gardening*, &c. In the execution of this part of the work, we admire the Editor's method of expreſſing common things in a manner that even the learned may profit by them, and the ignorant be inſtructed. When a lexicographer accompliſhes this intention, we think he has not only done his duty, but even every thing that can be expected of him. When he has given an hiſtory of the Art, the improvements that have been gradually made in it, the uſual methods of practiſing it, and the reaſons upon which it is founded, little elſe remains to be done. As in the dictionary of a language, the letters, which are the elementary principles of words, are ſuppoſed to be known; ſo in a dictionary of arts, the elementary principles of ſcience are preſuppoſed. The conſideration of this circumſtance points out to us the boundaries where a ſcientific dictionary ought to begin; but perhaps it is not ſo eaſy to determine where it muſt end. The Editor has much increaſed and improved the work he ſet out with, and when we find that he has faithfully recorded the material advances that have been made in ſcience, we may ſafely conclude that he has arrived at the end of his journey.

The Supplement to Chambers's Dictionary, which was publiſhed about 30 years ago, by Mr. Lewis Scott and Dr. Hill, has been duly attended to by the preſent learned Editor, and though he has incorporated the moſt valuable part of the labours of thoſe gentlemen into the original alphabet, yet his judgment has in every inſtance ſelected only what was neceſſary and uſeful, and rejected the ſuperfluous and redundant. From what has been ſaid of the Supplement in the beginning of this article, it is evident that the ſtate in which it was publiſhed, rendered a reviſal of it abſolutely neceſſary; and that the incorporating it into the original would require a number of articles to be abridged or altered, in order to make them ſuit the places where they ought to be inſerted. This taſk, however laborious and difficult,

ſeems to have been executed with care and attention; which is not one of the leaſt recommendations to which this work is entitled.

From the account we have given of this new edition of Chambers's Cyclopædia, our Readers may be in ſome meaſure enabled to form an idea of the merits of the work. To give a particular circumſtantial detail of every article, or every claſs, cannot be expected. We can with propriety aſſure our Readers, that, as a repoſitory or ſtorehouſe of the arts and ſciences, the performance before us is every way entitled to a place in the library of the philoſopher, the artiſt, and the man of polite literature; and we think the learned world under conſiderable obligations both to the proprietors and the Editor, for producing to them a work of ſuch general and important utility. R—m

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ART. II. *Memoirs of the Literary and Philoſophical Society of Mancheſter*, concluded: See our laſt.

WE next find our attention engaged by Dr. Barnes's Memoir, *On the Influence of the Imagination, and the Paſſions, upon the Underſtanding.*

In this elegant eſſay, Dr. Barnes pleads the cauſe of the *imagination*, with irreſiſtible force and energy. He finds it neceſſary to begin with propoſing a new idea of human nature. This he conceives to be '*one uncompounded eſſence, continually in motion, and receiving different denominations, according to the different modes and circumſtances of its movement.* Inſtead of conſidering the underſtanding, memory, paſſions, and will, as diſtinct and oppoſite powers, or as unconnected tenants under the ſame roof, would it not be more juſt to conſider them all as *modes* of the MIND ITSELF, and as each of them bearing the common nature of the whole united ſpirit? We ſhould then conſider the *mind itſelf* as underſtanding, the *mind itſelf* as judging, remembering, feeling, willing. And this idea would be exactly conſonant to many facts, and phenomena of human nature, which will be hereafter mentioned.'

The human mind, then, he conſiders, as 'one *uniform and ſimple eſſence*, liable to be moved or affected by the various objects around it, or the flow of ideas continually paſſing before it—and according to the ſtate and temperament of the *whole indiviſible maſs*, judging, feeling, willing, acting. Hence it will follow, that it will judge, and feel, and act, not according to the impulſe of ſome *diſtinct* and *unconnected* faculty, but according to the ſtate and diſpoſition of the *whole mind.*'

Hence he argues, that though truth be at all times the ſame, yet it appears extremely different to different minds, and even to the ſame mind at different times, according to its nature and character at the time; that the judgment will faſhion itſelf

to the ſtate of the heart,—and that, in almoſt every inſtance, a falſe taſte, or feeling, will lead to falſe opinion, whether in poetry, painting, muſic, criticiſm, oratory, or art in general. Is there not (he adds) an almoſt univerſal conformity between the feelings and the judgment? Even vice itſelf, in the paroxyſms of temptation, for a moment ſeduces the underſtanding, and blinds the reaſon. At *that* moment, the ſinner promiſes himſelf impunity and enjoyment. Nor is it till the temptation is paſt, that the mind ſees again the deformity and danger of vicious conduct.

Our Author having taken great pains to eſtabliſh this principle, proceeds to define what he underſtands by the word *imagination*; and we preſume that many of thoſe warm diſputes which have ariſen on the queſtion he here diſcuſſes, would have been brought to a very ſhort iſſue, if the diſputants had begun by a definition of this word.

'Imagination, ſays he, is that *power*, or more properly that *act* of the mind, which aſſembles, compounds, divides its ideas, *not* in the order in which they firſt came into the mind, for *that* is the province of *memory*, but in *any* order, and upon *any* principles it chooſes. It ranges abroad, through the immenſe magazine and repoſitory of ideas treaſured up there, and joins together, or ſeparates, at pleaſure, ideas, qualities, and forms. It may be called the ſervant or labourer of the mind, continually employed to bring before it, from its amazing ſtorehouſe, materials, with which to build up its concluſions. It is the ever buſy, patient, indefatigable drudge, toiling for the common benefit and aſſiſtance of all the other powers; and does not deſerve the indignities and reproaches it is continually receiving.'

When this definition of the powers of imagination is admitted, no one will have any difficulty in allowing, that without its aſſiſtance, the mind can form no ſort of judgment on any ſubject whatever, and we are ſorry we cannot make room for the variety of illuſtrations here adduced. We muſt content ourſelves with one:

'Imagination is neceſſary to repreſent to the mind, all things *diſtant*, *future*, *inviſible*, and even *paſt*, when they are not *exactly* recalled by *memory*. How wide! how important its office! In RELIGION, the happineſs of heaven, the nature, character, and employment of ſuperior beings, the ſolemn proceſſes of judgment,—eternity, and even the Deity himſelf, can only come before us as drawn by the imagination.

'In *hiſtory*, you continually *imagine* characters, events, times, places, circumſtances, which you have never ſeen. Theſe are pourtrayed to your fancy by the pen of the hiſtorian; and your pleaſure and improvement will very much depend upon the clearneſs and celerity with which you paint to yourſelf the different

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ſcenes which are paſſing before you. All the pleaſures of *taſte* depend abſolutely upon a vigorous and cultivated imagination. Even in the actual contemplation of the ſcenes of nature, imagination is as neceſſary to refined pleaſure as the *eye*. Perhaps we might, without great impropriety, call it, the *eye of the mind*. If any perſon ſhould think this appellation would better belong to the underſtanding, let him recollect that the eye of the *body* can give no *exact* information, till rectified by the judgment. It is juſt ſo with the imagination. The ideas *it* preſents muſt be brought before the higher tribunal of the underſtanding, and receive their ſentence, according to its ſuperior determination.'

Imagination, therefore, though a moſt active and valuable ſervant, without whoſe aid the mind could not perform her neceſſary duties, muſt ſtill be conſidered only as uſeful in this ſubordinate capacity; and wherever it is ſuffered to aſſume the ſeat of *judgment*, the whole œconomy is deranged. 'That imagination *may*, that it often does tranſgreſs its proper bounds, we moſt readily acknowledge. That it is neceſſary to hold it in with a *tight rein*, that it may not run away with the underſtanding, and lead to concluſions fanciful and groundleſs, we allow in its fulleſt extent. We contend only for that *degree* which will conſiſt with the exactneſs of judgment.'

*On the natural Hiſtory of the Cow, ſo far as it relates to the giving Milk, particularly for the Uſe of Man.* By C. White, Eſq. F. R. S. &c.

The particulars here ſpecified, of the natural hiſtory of the cow, are few. The ſize of the udder, the largeneſs of the teats, the capaciouſneſs of the ſtomach, are all paſſed in review; but the circumſtance chiefly inſiſted on as being peculiar to the cow, is the capacity of being made to yield milk, by the hand, for a very long time, without being ſucked. This faculty our Author, and we believe juſtly, attributes to the cow in a ſuper-eminent degree; though it is well known that goats have been kept in milk, at ſea, for a very long time, without being ſucked.

We were ſurpriſed not to find in this article any notice taken of one circumſtance in the natural hiſtory of the cow, that we believe is altogether peculiar to this claſs of animals, and which we do not recollect to have ſeen mentioned by any writer on natural hiſtory. It is that faculty by which ſhe is enabled to retain her milk at pleaſure, or to allow it to be drawn from her by the hand, juſt as ſhe pleaſes. Some other animals, we know, can never be made to ſuffer their milk to be drawn from them by the hand, unleſs when the young is ſucking—but the cow is in this reſpect ſometimes ſo capricious, as to let down no milk to one individual milkmaid, while ſhe yields it freely to others; but more frequently ſhe gives it to ſome favourite maid, and retains

retains it from all others. The fact is inconteſtible, that ſhe has it in her power to retain her milk at pleaſure.

*An Inquiry concerning the Influence of the Scenery of a Country on the Manners of its Inhabitants.* By William Falconer, M. D. F. R. S.

We do not find much originality in the Eſſay before us. A number of obſervations that have been often made by writers, who grounded their notions on analogical ideas rather than on an accurate examination of facts, and their diſtant and proximate cauſes—ſuch as that a mountainous country produces a ferocious people—that thoſe who inhabit a foggy country are gloomy—that flowery ſcenery inſpires love, &c. &c. are here collected together. We think a much better diſcourſe might have been compoſed, with a view to ſhew that theſe notions are groundleſs, and the impoſſibility of reconciling them to well known facts. The beſt part of the eſſay, is, we think, the beginning of the following paragraph, which contains the moſt conciſe and the juſteſt definition of taſte we have any where met with.

'Taſte, *which is, in other words, the faculty of diſcerning and reliſhing beauty*, is acquired by the compariſon of beautiful objects with one another, and, upon that account, is likely to be found in greater perfection, where thoſe objects abound the moſt, and where, of courſe, ſuch compariſons would be the moſt obvious and eaſy. Hence ſprings, in a good meaſure, I apprehend, the elegant and varied fancy of the eaſtern people, exemplified in ſome of their works of art, particularly the patterns of their manufactures. The diverſified beauty of the vegetables that cover the ground in thoſe countries, could ſcarcely fail to ſuggeſt ideas, far ſuperior to what could be imagined by whoſe who never had an opportunity of ſeeing ſuch delicate productions.'

According to this hypotheſis, the Hottentots ſhould be eminently diſtinguiſhed for their delicacy of taſte in the fine arts, for few countries produce a greater variety of beautiful plants. But who are the eaſtern nations here alluded to? Though we are told that beautiful plants abound in China, it is well known that the *taſte* of the Chineſe in the fine arts, is inelegant, even to a proverb. The perfection of the fabric of ſome of their manufactures, and the brilliancy and durability of ſome of their colours, are as remarkable on the one hand, as their want of taſte in the uſe of theſe is on the other. It is the faculty of obſerving and comparing objects together, and not merely the being poſſeſſed of beautiful objects, that leads to a refined taſte: for men may be often ſo circumſtanced that though they have eyes they ſee not, and therefore think not of ſelecting, or forming agreeable combinations.

*Thoughts*

*Thoughts on the Style and Taſte of Gardening among the Ancients.* By the Same.

Dr. Falconer ſeems to delight in claſſical reading, and therefore is well qualified for the taſk he has here undertaken. The reſult of his enquiry is, that the ancients had no idea of any other kind of garden than what would be now called a kitchen-garden, or orchard, until toward the decline of the Roman empire, unleſs it be the hanging gardens of Babylon, which Dr. Falconer ſeems to think were in a good taſte. Groves of trees, with ſhady walks adjoining to the houſes, ſeems of old to have been the taſte for gardens in Aſia, as it is at preſent. The gardens of Lucullus ſhew that great extravagance prevailed in this reſpect, as well as in many others, at that time, at Rome.—But the more accurate deſcription of the gardens of Pliny demonſtrate, that a taſte for *natural* beauties in an artificial garden had not as yet obtained footing in Italy. Thoſe Readers who have a taſte for diſquiſitions of this ſort, and who are not capable, or have no opportunity, of reading ancient authors in their own language, will peruſe this eſſay with pleaſure.

*On the different Quantities of Rain that fall at different Heights over the ſame Spot of Ground, with a Letter from Benjamin Franklin*, LL. D. By Thomas Percival, M. D. &c.

Every modern diſcovery tends more and more to impreſs the mind with a reverential reſpect for the memory of Bacon; for ſcarce one has been made ſince his time, that he did not point at directly, by alluſions that were not then underſtood, or traced the plan of experiments which, if followed, muſt have long ago led to the diſcoveries we make, had it been ſteadily adhered to. Chance lately brought to light the curious fact alluded to in the title of this eſſay, and which has been confirmed by the experiments of Heberden, Cavendiſh, and others. This fact, and many more, muſt have been made known long ago, had the experimental tower he projected been reared on his extenſive plan: but philoſophers are not, *even yet*, ſufficiently enlightened to perceive the very great utility of many of his projected courſes of experiments.

The preſent eſſay contains nothing new. Dr. Percival recapitulates the heads of a paper, which he publiſhed, on this ſubject, in his Philoſophical, Medical, and Experimental Eſſays; in which he endeavours to account for this phenomenon from the action of the electric fluid, an idea that was many years ago ſtarted, as far as relates to the formation of drops of rain, by Dr. Franklin. The letter from that illuſtrious philoſopher, here firſt publiſhed, goes but a little way toward accounting for the fact in queſtion, as he judiciouſly remarks, that the experiments have as yet been too few, and too little diverſified, to enable us to form a thoroughly incontrovertible hypotheſis. He well obſerves,

that

that though the operation of the electric fluid may account in a tolerably ſatisfactory manner for the production of drops of rain, yet the long continuance of ſmall ſhowers, which we often experience, does not ſeem to be eaſily accounted for on this principle.

*Eſſay on Crimes and Puniſhments.* By the Rev. William Turner.

No branch of juriſprudence has obtained a greater degree of attention than that which relates to puniſhments; and we are happy to find that only ONE opinion prevails with reſpect to the *principles* of the penal code, *viz.* That undue ſeverity only augments the miſery of individuals, without benefiting the community. Mr. Turner, with a liberality of ſentiment that does honour to his heart, and with a force of reaſoning that excites reſpect for his underſtanding, adduces many reaſons to ſhow how hurtful, ſeverity of puniſhments is, and how contrary to the principles of common ſenſe and ſound reaſoning.—He conceives that *capital* puniſhments, in moſt caſes, argue only a want of capacity in the legiſlator. It is eaſy enough, indeed, adds he, for the magiſtrate to *extirpate* mankind; but it is his buſineſs to make them better. Capital puniſhments, he thinks, took their riſe in that ſtate of barbariſm and ignorance which prevails in the infancy of every ſociety, and have been ſince continued through indolence and inadvertency. 'In the infancy of a ſtate,' he obſerves, 'when any one had committed an offence, and diſturbed the peace of ſociety, the queſtion would then firſt ariſe, "How ſhall we prevent theſe things?" and the anſwer moſt likely to occur to a ſet of barbarians would be, "extirpate the offender, and give yourſelves no more trouble about him." But, as civilization increaſed, it would ſoon be found a wiſe method, to provide ſuch expedients as might effectually induce the offender himſelf not to repeat his offence, deter others from its future commiſſion, and at the ſame time, preſerve an uſeful member to ſociety. And though I will not undertake to determine univerſally, that in proportion as political governments have advanced towards perfection, ſubſtitutes for capital puniſhments have been more frequently introduced, yet I think it may be aſſerted with perfect ſafety, that government will never arrive at the perfection of which it is capable, till ſome very eſſential reform is obtained in our treatment of criminals.'

Our well-informed Author does not content himſelf with bare general aſſertions, but enters into particulars, and points out ſome of thoſe devices that have a natural tendency to prevent the commiſſion of crimes, and even puniſhments;—but we muſt refer the curious Reader for farther ſatisfaction to the eſſay itſelf, which, though ſhort, contains many excellent hints, and judicious obſervations. Nothing, indeed, reflects ſuch diſgrace upon the Britiſh nation, as to ſuffer ſuch a multiplicity of ſevere penal

ſtatutes

ſtatutes to remain unrepealed, long after every man in the nation is ſatisfied of the iniquity of them; and we have reaſon to acknowledge with ſhame, as he juſtly obſerves, 'that ſtealing a ſwan—breaking down a cherry tree—letting out the water of a fiſh-pond—being ſeen in the company of gypſies—with upwards of *a hundred and fifty* other actions, which a man is daily liable to commit, are declared by Engliſh Acts of Parliament, *crimes worthy of inſtant death!*'

*Account of an Excurſion through a ſubterraneous Cavern at Paris.* By Mr. Thomas White, Member of the Medical Society of Edinburgh, &c.

Though the caverns here deſcribed are ſlightly mentioned in the *Tableaux de Paris*, yet few perſons ſeem to be acquainted with them; and government cautiouſly wiſhes to keep theſe caverns concealed from the generality of the people in Paris, leſt they ſhould excite alarms, that might be productive of very diſagreeable conſequences.

Theſe ſubterraneous caverns are indeed of amazing extent, and are ſaid to have been formed by digging from them the ſtones with which the city of Paris has been built, and extend under a great part of that city. The depth of this quarry, at the Royal Obſervatory, where our Author entered into it, is three hundred and ſixty feet perpendicular. The general height of the roof is about nine or ten feet, but in ſome parts not leſs than thirty or forty. It branches out into large and ſpacious ſtreets, all marked with names, the ſame as in the city. In ſome places the roof is ſupported by pillars of maſonry, and in others it is propped with wood only, which is in many caſes decayed and rotten, ſo that it is not ſurpriſing that it ſhould ſometimes fall in, as we are told it actually does. What the extent of theſe caverns is, we are not told, as our Author only may be ſaid to have traverſed along one ſtreet, which reached from the Obſervatory to the *Val de grace*, near to the Engliſh Benedictine Convent, where our Author and his party aſcended, after having walked, as they imagined, above two French leagues.

The account of this ſubterranean expedition is enlivened by the deſcription of a kind of ſaloon, cut out of the rock, ſaid to be exactly under *l'egliſe de St. Jaques*, which was illuminated with great taſte for the occaſion. But the naturaliſt will meet with nothing here to ſatisfy his curioſity.

*Memoirs of Dr. Bell.* By James Currie,. M. D. Addreſſed to the Preſidents and Members of the Literary and Philoſophical Society of Mancheſter.

Dr. Currie, it appears, was the intimate acquaintance and friend of Dr. Bell; and drew up theſe memoirs of him at the deſire of the gentlemen to whom it is addreſſed; to whom he alſo

alſo preſented a tranſlation of Dr. Bell's theſis, *De Phyſiologia Plantarum*, printed at Edinburgh. Though we do by no means approve of compoſitions of this nature being inſerted in the memoirs of literary ſocieties, as theſe are neceſſarily unintereſting to ſtrangers, and have a tendency to degenerate into fulſome panegyric; yet we muſt do Dr. Currie the juſtice to ſay, that he here ſeems to have been much upon his guard in this reſpect, and has executed the taſk that was impoſed on him in a way that does him much honour. The theſis is a very good collection of ſuch obſervations on the ſubject, as were known at the time when it was written; but it contains little that is new. We cannot help thinking the Society have, on this occaſion, deviated ſomewhat from the plan we imagined they had chalked out for themſelves, and have acted with rather leſs dignity than was becoming ſo reſpectable a body, by making themſelves the editors of tranſlations of works already publiſhed; for the republication of a theſis can ſcarcely be claſſed among original works.

*Of the voluntary Power which the Mind is able to exerciſe over bodily Senſation.* By Thomas Barnes, D. D.

In this eſſay the Author adduces many examples to ſhew, that by a vigorous exertion, the mind may ſometimes be ſo keenly engaged as not to have leiſure to attend even to acute bodily ſenſations; or if it does attend to them, may conſider them as of ſuch an inferior kind, as in ſome meaſure to diſregard them. Thus he accounts for the apathy of the Stoics, the heroiſm of the patriot, and other ſimilar caſes. But, 'the ſublimeſt feelings which can govern the human heart,' he obſerves, 'are thoſe inſpired by religion; for religion carries the ſoul beyond itſelf, and centers all its ſtrongeſt affections upon the Creator, and a better world. If theſe be properly, that is, habitually felt, they will be moſt friendly to that ſelf-poſſeſſion which braces the mind in all its beſt and moſt laſting energies. Theſe feelings are permanent in their nature, and large in their object. And how wonderful are, often, their effects! In that awful hour of diſſolving nature, when the body is racked with expiring agonies, faith and hope have frequently preſented the moſt aſtoniſhing ſpectacles of fortitude, yea even of triumph! The mind, borne upward towards its Maker, has been able to ſmile in pangs, and to exult in diſſolution.'

The pleaſure we have felt on the peruſal of many of theſe memoirs, and our conſtant deſire to cheriſh the beginnings of any uſeful inſtitution, having made us extend our remarks on theſe volumes to an unuſual length, we ſhall only add that the figure which ſtands as a frontiſpiece to the firſt volume appears to us to be delineated in ſuch a natural, unaffected manner, and with ſuch uncommon truth of expreſſion, without any touch of

of grimace, as does great honour to the taſte and execution of the performers. It was drawn by G. Bew, Secretary to the Society, and engraved by Angus.

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ART. III. *Tranſactions of the Society for Encouragement of Arts, Manufactures, and Commerce.* Vol. IV. 8vo. 4s. Boards. Becket, &c. 1786.

THE Public is already acquainted * with the nature of this Society, which has ſubſiſted for more than twenty years, with unimpaired luſtre, and at the preſent moment contains a numerous body of the moſt reſpectable members of the community, who generouſly contribute money to form a joint fund for the encouragement of arts, and, with ſtill more liberality of mind, appropriate ſome ſhare of their time and attention to promote the proſperity of their native country, by the diſſemination of uſeful knowledge; and we hope their labours will be crowned with ſuch obvious ſucceſs, as will encourage them not to ſlacken in their laudable endeavours.

The preſent volume of the tranſactions of this reſpectable Society is divided, as uſual, into papers relative to agriculture, chemiſtry, polite arts, manufactures, mechanics, colonies, and trade; and contains liſts of the rewards adjudged in 1785, of preſents received, of officers of the Society, of premiums, 1786, and of members. We ſhall endeavour to give ſome notion of the principal papers in each of theſe claſſes, in order as they occur.

## AGRICULTURE.

*Thomas White* of Retford in Nottinghamſhire, Eſq. obtained the gold medal for having planted the greateſt number of Engliſh elms. The firſt paper in this claſs contains an authentic account of the different kinds of timber trees planted on that gentleman's eſtate in the county of Durham, as they were numbered before they were ſet in the ground, *viz.*

| | |
|---|---|
| Alders - - | 37,230 |
| Aſh, Mountain - | 4,000 |
| Beech - - - | 1,150 |
| Birch - - - | 62,692 |
| Elms - - | 10,000 |
| Firs, Scotch - | 35,135 |
| Larch - - - | 240,523 |
| Weymouth Pines - | 6,100 |
| Sycamores - - | 3,397 |
| Total - | 400,227 |

* For our account of the three preceding volumes, ſee Reviews, vol. lxx. p. 199. vol. lxxii. p. 17. and vol. lxxiii. p. 172.

A noble

A noble plantation indeed! We rejoice that ſo much attention is beſtowed on this very uſeful article, in *England*, by *ſome* individuals, though we muſt regret that thoſe individuals are ſo few; becauſe we are ſatisfied that no rural improvement can ever turn out ſo beneficial either to the perſons who undertake it, or to the Public in general, as plantations of timber trees made with judgment. We are informed that, in Scotland, it is no uncommon thing for a private gentleman to plant ſeveral *millions* of trees; and we have heard of one baronet there, who boaſted he had planted, during his own lifetime, FIFTY MILLIONS!—but we knew not before that any private gentleman in *England* had made ſuch extenſive plantations as the above.

We cannot, however, help remarking, that in the above liſt there is not to be found a ſingle plant of the two moſt valuable trees this country produces, viz. the *oak* and the *aſh*, though we are glad to ſee that the number of *larches* is ſo great. Perhaps ſome peculiarity of the ſoil and ſituation that we know nothing of, has been the cauſe of the excluſion of our royal oak—and her uſeful rival, the aſh. But we can ſcarcely form an idea of an extent of land ſo conſiderable, without a proper place for *ſome* of theſe trees; and therefore we lament their total excluſion.

The Rev. Mr. Cloſe, of Trimley, near Ipſwich, communicates the reſult of what he ſeems to think an important experiment, in the ſecond paper. Six acres and a half of a mixed loamy land were ſet with wheat on the 16th, 17th, and 18th of October 1783, planting alternately two feet two inches, and leaving the ſame diſtance unplanted. April 26th, 1784, the intervals were ſet with the beſt champion potatoes. The wheat was ſet with a frame two feet two inches wide, divided into ſeven tines (five tines he thinks preferable). The potatoes were dropped in a furrow made by a ſmall deep pitched double breaſted plough, about ten inches from ſet to ſet in the rows.

Produce on the whole, of wheat 32 cooms at 1l. 2s.

| | | | |
|---|---|---|---|
| *per* coom - - - | £. | 35 | 4 0 |
| Ditto of potatoes, 100 ſacks, which ſold at 6s. *per* ſack - - - | | 30 | 0 0 |
| and 48 ditto, which ſold at 7s. *per* ditto - - - - - | | 16 | 16 0 |
| In all - | £. | 82 | 0 0 |
| or *per* acre - - - - | £. | 11 | 14 9 |

Mr. Cloſe conſiders this as a very great crop, and views this mode of planting wheat and potatoes together on the ſame ground as a very great improvement. We ſee it in neither of theſe lights: 32 quarters of wheat and 296 ſacks of potatoes would not be reckoned an extraordinary produce from ſix acres and a half of

good land in two years. This is only at the rate of 136 buſhels of potatoes (ſuppoſing the ſack to be 3 buſhels) *per* acre; and it is well known that three times that quantity has been obtained, and 4 quarters 3 buſhels and a half of wheat *per* acre, which would not be reckoned a great crop on any well-cultivated field. It thus appears that neither the crop of wheat nor of potatoes was ſo great as if the two crops had been obtained in ſucceſſive years. Nor is it poſſible to cultivate the ground at any time ſo perfectly by this *half-husbandry*, as Mr. Cloſe calls it, as could be done by ſucceſſive crops of potatoes and grain.

We next find an account of ſome drilled crops, by Mr. Whitmore. The crop of barley he mentions, which, when drilled in rows at 18 inches diſtance, yielded ſixty buſhels of barley *per* acre, is a very good one. But Mr. Whitmore, who ſeems to be but a beginning farmer, has *already* found out one very material defect that will ever attend the mode of culture he is ſo highly enamoured with, that of giving late and unequally ripe grain. After he has had at leaſt twenty years experience we ſhall be much more diſpoſed to follow his *practice*, than his *advice* at preſent. He is certainly in a great miſtake, when he ſuppoſes the roots of barley extend no farther than ſix inches in queſt of food. Let him conſult Tull's experiments, to aſcertain how far the roots of plants extend.

The gold medal was adjudged to Mr. Thomas Robins, near Tetbury, Glouceſterſhire, for the greateſt quantity of turnip-rooted cabbages *per* acre. The certified weight *per* acre is 13 tons 10 cwt. and 76 pounds *. This, he admits, is a ſmall produce in compariſon of turnips; but he thinks, as it comes into uſe at a time when food is ſcarce, the value makes up for the ſmallneſs of the quantity. After the turnips were all gone, he found that 200 ewes with their lambs (quere, the average weight of the ewes), could be kept a day on one ton, or twenty hundred weight of theſe cabbage. The whole value of this crop depends on its keeping as a green food late in the ſpring. This is the fact therefore that ſhould be chiefly attended to, that it may be fully aſcertained.

It appears by a letter from Mr. John Roſs, profeſſor of church hiſtory in the Univerſity of Aberdeen, that the turnip-cabbage reſiſts the ſeverity of the winter in the northern parts of Scotland.

In the ſubſequent article Mr. Wagſtaff, of Norwich, communicates to the Society the reſult of ſome experiments which he had made on cultivating unimproved and healthy ſoils. Thoſe who are poſſeſſed of ſoils which come under that deſcription, ſhould be cautious how they follow his example; for ſhould they attempt it on many ſoils of that denomination, their

* Seventy tons is no very extraordinary crop of turnips.

crops

crops would be—nothing. Certainly ſome peculiarity, not mentioned in Mr. Wagſtaff's ſoil, has been the cauſe of its producing ſuch ſingular crops under the culture he gave it. Ought not the Society to have taken notice of this peculiarity?

Next follows an account of ſome experiments on the culture of a giant hemp, which grows to 14 feet high; and of a kind of flax, the ſeeds of both which were brought from China. But neither of them appears to be adapted to our climate.

The moſt intereſting paper in this department, is an account of the manner of incloſing Ruſhley iſland, ſituated between Great Wakering in Eſſex, and Foulneſs iſland; by which two hundred and ſixteen acres of land, which were covered every flood-tide, but left dry on the ebb, were totally recovered from the ſea, and effectually defended againſt being ever overflowed by it. This work was atchieved by Mr. John Harriot of Rochford, between the middle of June 1781, and the 17th of January 1782; for which he obtained the Society's gold medal.

Though this would have been reckoned a ſmall undertaking in Holland, where much land has been recovered from the ſea that was in a ſituation far more difficult to be cleared of water, and ſecured from it; yet as ſuch undertakings are little known in this country, we think much praiſe is due to Mr. Harriot for having ventured ſo far out of the common road, and ſo happily accompliſhed his aim. As we think the method he followed was ſimple, natural, and not very expenſive, while it, at the ſame time, bids fair for being effectual, we ſhall briefly give an account of it to our Readers, hoping it may ſtimulate ſome to follow his example: for we know, from our own obſervation, that many thouſands of acres of valuable land might be recovered from the ſea at a ſmall expence, round the ſkirts of this our native iſle, and its appurtenances.

Mr. Harriot, very judiciouſly, adopted the kind of fence ſo particularly deſcribed in a book, entitled, Eſſays relating to Agriculture and rural Affairs * (publiſhed, if we miſtake not, about ten years ago), and there demonſtrated to be the only effectual mode of reſiſting, at a moderate expence, the force of water. This contrivance was nothing more than that of forming the fence in the ſhape of an oblique inclined plane towards the water. On this principle, Mr. Harriot raiſed a bank of earth round his little iſle, 'thirty feet wide at bottom, ſeven feet high, and four feet wide at top, giving the advantage of the batter, or ſlope, full two for one on the outſide: that is, every foot in height was drawn in two feet; by this means the violence of the waves is ſo much abated, that inſtead of beating, ſhaking, and tearing the banks, which is the caſe of all that I have ſeen, they ſpend their fury in a gentle curl up the ſlope of the bank.'

* See Rev. vol. lvi. p. 179, for an account of thoſe Eſſays.

With all due deference to Mr. Harriot's judgment and experience, we beg leave to offer it as our opinion, that the ſlope here given to the banks is rather leſs than perhaps it ought to have been; but more eſpecially we ſhould be apt to dread, that the height may prove to be rather too ſmall. When a ſtrong wind chances to coincide with a high ſpring tide, we ſhould think there was ſome reaſon to fear that the ſea might be forced over the top of this dike, eſpecially as it muſt be ſuppoſed that it will gradually ſubſide ſo far as to remain at laſt of a much leſs height than it was at firſt. Had the baſe been larger, this defect, if it ſhould be afterwards obſerved, could have been remedied at a ſmall expence, merely by raiſing it higher; but in this caſe, to give much additional height would weaken the fence by bringing it too near to the perpendicular. Theſe remarks we throw out merely with a view to direct others, who may afterwards be induced to attempt undertakings of this ſort; and to remove any objections that may ariſe to the practicability of effecting ſuch a fence with ſafety, ſhould it chance (which we ſincerely hope will not be the caſe) that any accident ſhould happen to this new acquiſition.

We hope Mr. Harriot will ſucceed, by the plan which he has adopted, of *at laſt* obtaining freſh water in his pond; but he muſt not expect it for ſome time to be entirely ſo. We do not apprehend that the ſaltneſs he complains of is occaſioned by percolation through the ſoil at bottom, ſeeing the lining preſerves water ſo well from ſinking through it, but from other very obvious cauſes. The whole of the earth that is in this iſle has been ſo long drenched with ſalt water, that every drop of rain which touches any part of its ſurface, muſt waſh away ſome ſaline particles, ſo that all the water which runs into the pond *from the ſurface of the earth*, muſt neceſſarily have a ſaline impregnation. This will be at the firſt very ſlight, ſo as to produce no ſenſible effect; but as part of the water is evaporated by the ſummer ſun, that part which remains will become ſenſibly affected, ſo that it will be neceſſary once a year to have the pond cleared of all the water, and of the ſtrong ſaline particles diſſolved in it. If this be done, the impregnation will be leſs and leſs annually; ſo that, in time, if this mode be adhered to, it will become entirely ſweet. Theſe remarks will apply to every kind of ciſtern, were it even made of lead, or any other ſubſtance totally impervious to moiſture. In the mean time, Mr. Harriot will do well to be particularly attentive to preſerve the water collected from the roofs of his houſes. For that purpoſe let his ciſtern there be ſo large as not to overflow; and ſo ſituated as neither to be expoſed to the wind nor the ſun, to forward the evaporation of it; and if thus preſerved, ſhould his iſland produce any conſiderable proportion of corn, good water in abundance

dance may be always obtained. For if the open ciſtern be drained each ſeaſon, about the beginning of autumn, it will furniſh good water during winter; and if all the winter-water collected from the houſe be preſerved in the ciſtern till ſummer, it will go a great way *.

We wiſh Mr. Harriot much profit and happineſs from his new acquired domain, and that his ſucceſs may induce many others to follow his laudable example.

The only remaining paper in this department is a long one from Arthur Young, Eſq. being a continuation of the experiments on the cluſtered potatoe, at Bradfield Hall, Suffolk, from the third volume of theſe Tranſactions.

From the account here given, it appears that Mr. Young is himſelf but very little converſant in the culture of this valuable plant; that he has been groping his way, to diſcover facts that were well known to many perſons long before he began his experiments; and that he has not yet attained a due degree of knowledge on the ſubject he treats. By thoſe who are leſs ſkilful than himſelf, theſe experiments will be read with pleaſure; but by ſuch as have acquired much ſkill in this branch of agriculture, they will be regarded as futile. The general inference he draws on the whole is a juſt one; *viz.* that this plant may be cultivated with profit, perhaps, in every ſituation; and that it is not yet ſo generally cultivated as it ought to be. Mr. Young's conjecture about the exhauſting nature of potatoes, as a crop, ſeems not to be well founded.

## CHEMISTRY.

Under this head we meet with only one Paper: an Eſſay on portable Furnaces, by the Secretary to the Society, Mr. More. After ſpecifying the great utility of portable furnaces, and giving an hiſtorical account of the means that have been adopted for rendering theſe as perfect as poſſible, the ingenious Mr. More mentions a very eſſential improvement which he has made upon them; *viz.* to have the body of the furnace lined with a thin coating of *fire* bricks, properly ſhaped for the purpoſe, inſtead of the luting that Dr. Black of Edinburgh, and ſome others,

* Twenty-eight inches of rain is about an average of what falls in moſt parts of Great Britain in a year. If ſo, each ſquare foot would yield 4032 cubic inches of water, which is 17 gallons and a half nearly, or 157 gallons for each ſquare yard of roofing, meaſured horizontally; ſo that each yard in length of a houſe which was 21 feet, or ſeven yards wide, would afford 1099 gallons or about 17 hogſheads a year: of courſe every 100 yards in length of ſuch a building ſhould afford 17 hundred hogſheads of water; which, ſuppoſing the pond water to be good for eight months, would leave about 8 hogſheads a day for the conſumption of ſummer, if it were neither ſuffered to run to waſte nor evaporate.

have recommended. This, he obſerves, can be got at a very ſmall expence in London, and ſeems to be well calculated for anſwering every purpoſe that can be wanted in ſuch kind of furnaces.

## POLITE ARTS.

Under this head, we find a deſcription of an apparatus for enabling blind perſons to perform operations in arithmetic with eaſe and celerity, by *Thomas Grenville*, who has the misfortune to be himſelf blind. It differs in ſeveral reſpects from Saunderſon's numerical board, and is an improvement of it. The board is perforated full of holes, in exact lines, horizontally and perpendicularly. The lines conſidered horizontally denote units, tens, hundreds, thouſands, &c. reckoning from right to left, as uſual. And the perpendicular lines permit the figures to be placed below each other, as is uſual in every account. Pegs are made to fit theſe holes, on the head of each of which pegs is printed the figure (number) it repreſents, ſo as that, to a perſon who has the uſe of ſight, the account can be ſeen at once. The figures are diſtinguiſhed by the blind perſon, by means of certain pins placed in the heads of theſe pegs, which it is unneceſſary for us here to enumerate. Between the rows of holes for theſe pegs are rows of ſmaller holes, adapted to receive the bent ends of ſmall wires, which perform the part of lines, placed either horizontally or perpendicularly, as is neceſſary for any arithmetical operation. The box is formed into proper diviſions for holding the pegs and wires, and is doubtleſs a moſt uſeful apparatus for thoſe whom it was intended to aſſiſt; for there can be no doubt but that any blind perſon, with a little attention, by means of this ſimple apparatus, may perform every arithmetical operation that could be performed by him if he had the uſe of ſight.

We cannot help regretting that the Society did not cauſe the plate, which illuſtrates it, to be ſo engraved, as that the parts of it might be felt by the hand (in the ſtile of paper maché) for the uſe of the blind, who may be deſirous of forming an idea of it. This could have been done by means of printers' lines, and dots, even without engraving at all; for by means of theſe, if done upon dry, thick paper, much preſſed in the working, the lines would have been diſtinctly perceptible by the finger.

## MANUFACTURES.

Under this head, we meet with an intereſting account of the manner of managing ſilk-worms in England, by Miſs Henrietta Rhodes, of Cann Hall, near Bridgenorth; in which are aſcertained ſeveral important facts relating to this animal, that were not before ſufficiently, if at all known, and will open views to the ſpeculator, big with future conſequences to the proſperity of the manufactures of this country.

The

The breeding of ſilk-worms, with a view to profit in manufactures, was only introduced into France by Henry IV. in the beginning of the 16th century, contrary to the advice and opinion of Sully, who often remonſtrated with his clear-ſighted maſter againſt that project, becauſe he deemed it a chimerical undertaking to attempt to rear them in ſuch a cold climate as France. Experience has now ſufficiently proved, that the enterpriſing monarch judged more wiſely on this ſubject than the ſage and cautious miniſter; as it is well known that France now produces ſilk in very conſiderable quantities. But though France happily ſucceeded in this hopeleſs experiment, as it was judged at the time, ſcarcely an idea ſeems ever to have been ſeriouſly entertained by any one, that it was poſſible to rear the ſilk-worm with a view to profit in this country, or to eſtabliſh the ſilk manufacture on the produce of Britain. Yet we think the facts aſcertained by the ingenious and ſpirited Miſs Rhodes, go far to prove that it is not only *poſſible* to rear ſilk-worms on the produce of this country with a view to profit, but that it is even highly *probable* that they may be here reared with *equal*, if not with *greater* advantage than in Italy and other warm countries, where only, till very lately, it was believed they ever could be bred.

That the Reader may be enabled to judge for himſelf in regard to this particular, let him be informed, that our fair experimenter diſcovered, in the *firſt* place, that the eggs may be preſerved in a dormant ſtate, in this climate, with the greateſt eaſe as long as you chuſe; and that they can be brought to life whenever you incline, during the ſummer months, by merely expoſing them to the rays of the ſun; ſo that there is no danger of their coming before the food provided for them has been produced, or of their remaining dormant while it is in perfection.

In the *ſecond* place, ſhe has alſo found, that in the cool temperature of our ſummer air, the cryſalis remains ſo long in a dormant ſtate, that ſufficient time is allowed to wind off the ſilk without killing it, whereas in warm climates, where their revivification is much quicker, there is a neceſſity of killing the cryſalis, by expoſing it to the heat of an oven for a certain length of time, before the cones are wound off (boiling water is not ſufficient to kill it), to prevent them from eating their way through the cone. The ſilk, by the heat it is thus made to ſuſtain, is conſiderably damaged, which never needs be done in this country.

III. Where it is neceſſary to kill the cryſalis in all thoſe cones intended for the beſt ſilk, it becomes neceſſary alſo to ſelect a ſufficient number of the largeſt and beſt cones, that they may be preſerved for producing eggs. All theſe cones, therefore, are deſtroyed, and the ſilk of them in a great meaſure waſted by the holes that the moth eats through the cones when hatched; and

thus a great waſte is incurred, which with us would be entirely prevented.

IV. With a view to loſe as little as poſſible in this way, thoſe who rear ſilk-worms, in warm climates, ſuffer no more moths to be produced than are ſufficient to lay the number of eggs that are barely neceſſary for keeping up their ſtock of worms: ſo that, if any accident happens either to theſe eggs, or to the worms after they are hatched, they muſt, for that ſeaſon, loſe the whole produce of their ſilk-worms. But as, in England, the eggs of all the moths, without exception, might be preſerved, if neceſſary, without any waſte whatever of the ſilk, it is impoſſible that thoſe who may *here* follow this buſineſs ſhould ever be ſubjected to the inconvenience above mentioned.

V. It is found by experience that thunder is extremely prejudicial to the ſilk-worms; ſo that many millions of them may be killed by a thunder ſtorm, and with them the ſilk they ought to have produced is entirely loſt. But as thunder is much more frequent, as well as more violent in warm countries than in England, the loſs ariſing from accidents of this nature muſt be *there* much oftener experienced than *here*; ſo that our chance of ſucceſs muſt be much greater on this account than theirs.

From all theſe conſiderations it would ſeem, that ſilk-worms may be reared in Great Britain with equal, if not with greater probability of ſucceſs, than in thoſe countries where they have been hitherto reared, with a view to profit in manufactures; and this opinion is confirmed by the obſervations that follow:

Miſs Rhodes has found that the ſilk-worm can be fed upon lettuce, and kept in perfect good health on that food alone, for *four* out of *five* weeks that it uſually exiſts in the vermicular ſtate; ſo that it requires only to be fed about *one* week on mulberry leaves. Now, if it be conſidered that mulberry trees can bear the climate of Britain perfectly well, ſo as to produce leaves in as great abundance here during the ſummer months, as perhaps in any part of the globe, it ſeems impoſſible to deny that raw ſilk can be produced here, in any quantity that might be judged proper, at as low a price, or poſſibly lower, than in thoſe parts of the world from whence we at preſent obtain it, ſhould the following ſyſtem of œconomy, or ſomething like it, be adopted.

It was found by experiment, by Miſs R. that ten thouſand ſilk-worms conſumed, in a day, about one buſhel of freſh mulberry leaves. Now, let us, for example, ſuppoſe that a plantation of mulberries was made of ſuch an extent, as to yield ten buſhels of leaves a day during four months each year. In this caſe, it would be proper for the owner to hatch about a hundred thouſand eggs, four weeks before the mulberry leaves ſhould have attained their full perfection; the worms to be fed during theſe four weeks on lettuce. At the end of a week or ten days,

or (for the preſent ſay) a fortnight, let another hatching of the ſame number be made. Theſe would be ready to take to the mulberry leaves after the former brood had begun to ſpin. And if another hatching ſucceeded theſe, and ſo on through the whole ſeaſon, it is plain, that thus the mulberry plantation (a ſufficient ſupply of lettuce being always kept up at the ſame time) could rear in one ſeaſon, at leaſt eight (it might be ſixteen) broods; but we ſhall call it *ten*, that is, one million of worms in a ſeaſon. Whereas, in the way they are at preſent managed in Italy, that plantation could have ſubſiſted no more than one hundred thouſand; becauſe, in as far as we can learn, the natives of theſe countries never have been in the practice of trying to preſerve the eggs beyond the time the natural heat of the climate produces them; ſo that the whole brood comes into life at one time; and that number never can exceed that which their food is capable to ſuſtain *at once*, which by the ſuppoſition was a hundred thouſand.

We are now alſo brought to ſee of what importance it is to be able to preſerve an inexhauſtible ſtore of eggs, without any expence, becauſe theſe are always in readineſs to be hatched in *any* quantities that the ſupply of food may indicate to be neceſſary: and in caſe of the deſtruction of any part of the brood by thunder, or any other accident, that loſs could be ſpeedily retrieved, by hatching a new brood to ſupply their place.

We may alſo obſerve, that conſidered as a manufacture, calculated to give employment to women and children, many would be the advantages from rearing them in ſucceſſive broods, as is here propoſed, for Great Britain, in compariſon of having the whole *at once*, as in other countries. In the firſt way, conſtant employment would be given for the neceſſary hands, for many months, without any extraordinary hurry at one time, the ſeveral broods coming in regular ſucceſſion; ſo that the cones of one brood would juſt be finiſhed when another was ready to begin: whereas in the other caſe, all the work comes only at one time, which then occaſions a great hurry,—and idleneſs afterwards muſt enſue.

We have enlarged a little on this important article, with a view to bring the ſubject as generally as poſſible under the conſideration of the Public, and to induce ſome enterpriſing individual to make trial of a plantation of mulberries on the plan here develloped. We ſhall briefly mention a few other particulars, taken notice of by our amiable conductreſs in this pleaſing excurſion.

Miſs R. found by accurate experiment, that a ſingle cone of her ſilk, produced from a worm that had been fed only one week on mulberry leaves, yielded a thread of four hundred and four yards in length, which when dry weighed three grains. But,

upon

upon an average, ſhe found that it required about three hundred and ſixty cones to yield an ounce of ſilk; independent of the looſe ſilk round the cones, and other refuſe ſilk, that muſt be carded, which is at leaſt equal in weight to the pure ſilk; ſo that, in all, 360 cones yield about two ounces of ſilk, fine and refuſe together.

Miſs Rhodes takes notice of one peculiarity attending the mulberry leaves, that was new to us. It is, that no animal ſeems to prey upon that leaf except the ſilk-worm alone. Nor did ſhe find any other vegetable common with us that was wholeſome to the ſilk-worm excepting lettuce only. It is probable, however, ſome other plants may be found which will anſwer the ſame purpoſes; and it is worth while to continue to try if ſuch can be diſcovered. She found that neither *Elm*, *Aſh*, *Vine*, *Hazel*, *Lime*, *Currant*, *Cheſnut*, *Kidney-bean*, *Strawberry*, nor *Raſpberry* would do, nor common *Cabbage*. Lettuce is one of the lacteſcent ſemifloſculous plants, and among theſe, trials ſhould be made; eſpecially when it is obſerved that theſe plants in general, like the mulberry, are very little liable to be eat by any kind of caterpillars. Have *Dandelion*, *Sow-thiſtle*, and others of the ſame nature, been tried? Though moſt quadrupeds refuſe theſe, we have obſerved that rabbits prefer them to moſt kinds of plants.

We congratulate Miſs Rhodes on the honour that ſhe has acquired by theſe experiments; and hope ſhe will have the happineſs of ſeeing many follow her example.

## MECHANICS.

Under this head we find a deſcription of a new chime-clock, invented by Mr. Robert Simpſon, of Ship Court, Weſtminſter, on a principle that is ſimple, and it appears to be eaſily kept in order; but it could not be underſtood without a drawing. The ſame may be ſaid of a contrivance, by Mr. Bunce, for ſtopping the wheel-crane, by means of a ball—of which no figure is given. Two contrivances alſo are mentioned for a temporary canvaſs covering to be thrown over hay-ricks while building; one by the Rev. Mr. Warren of Pomphlet, near Plymouth, and the other by Mr. Ailway; for an account of which we muſt refer the curious reader to the book itſelf. Mr. John Adams, teacher of mathematics, at Edmonton, Middleſex, alſo gives a deſcription of an artificial horizon for determining the apparent altitudes of celeſtial bodies with great exactneſs, of his own invention. The principle of this improvement conſiſts in adapting a glaſs with parallel planes, inſtead of a plane concave glaſs, to a level. As this diſcovery was communicated to Mr. Dollond long ago, who has ſince made many of them, which are now ſold under the name of the Dollondian horizon; and as theſe are now well known over moſt parts of Europe, a more particular deſcription of it is unneceſſary.

COLONIES

COLONIES *and* TRADE.

We are here told that the Mango-tree, and the true Cinnamon, are now flouriſhing in the Weſt-India iſlands, having both produced ſeeds, ſo that there is no probability of their ever being loſt there; as well as the Nankeen cotton; with which we ſuppoſe moſt of our Readers are in ſome meaſure acquainted. The plants of the Cinnamon-tree, and the Nankeen cotton, were both captured laſt war on board a French Eaſt Indiaman, by Lord Rodney, and preſented by him to the Governor of Jamaica, where we are told they now thrive abundantly. With regard to the Mango-tree, we meet with two accounts, which differ in ſome reſpects ſo far, that we are at a loſs how to reconcile them. By the firſt account we are told, that "Walter Maynard, being a native of the iſland of Nevis, in the Weſt Indies, and ſailing from Madras, touched at the iſland of Bourbon, in his way to Europe; and having taſted the Mangos of that iſland, and finding they were a moſt delicious fruit, was induced to have ſome Mango plants put into pots with earth, in order, if poſſible, to plant them in the Weſt Indies, and was happy enough to meet with a Weſt-India packet at ſea, which induced him, at that time, to go in her to the Weſt Indies, and was ſo fortunate as to eſtabliſh them in the iſland of St. Vincent; *ſince which they have fruited, and are now propagated in almoſt all the Weſt-India iſlands.*" This happened in the year 1770. The original tree was deſtroyed by the hurricane 1780; but we are told, "there are now many trees from the ſeeds of it that will bear this year" (1784).

By another account, we are told that the Mango-tree was planted at a place called the *Guinea*, in Barbadoes, about the year 1742 or 1743, which did not produce any fruit till the year 1760 or 1761, eighteen or nineteen years after it was planted; and that none of the young trees raiſed from this ſeed have yet produced fruit: whereas the St. Vincent's tree ſeems to have produced fruit in five or ſix years from the time of its being planted. Are theſe different kinds of Mangos? It does not appear that the natives knew any thing of the Mangos of Barbadoes about the year 1776; though the original tree had then carried fruit at leaſt nine years.

The remainder of this volume conſiſts of liſts of premiums offered—Preſents given to the Society—Members, &c. &c. of which no abridgment can be given.

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ART. IV. Dr. EDWARDS's *Edition of* XENOPHON's *Memorabilia*, concluded. See Review for October, p. 298.

SCHOLARS only are intereſted in the merits of the edition which is now before us; and by ſcholars, doubtleſs, we ſhall not be condemned for aiming at that exactneſs, which tends to

to aſcertain the ſenſe of Xenophon, and to determine the ability of his editor.

On compoſitions, indeed, in the learned languages, and on ſubjects of verbal criticiſm, we think it neither juſt nor becoming to employ general obſervation. In deſcending, however, to particulars, we cannot always ſeparate accuracy from minuteneſs; and in examining the opinions of learned men, we ſhall ſeldom venture to object, without attempting, at leaſt, to confute. Having made this apology to our Readers, we proceed in the farther ſelection of notes from Dr. Edwards.

Page 53. l. 10. ὅταν τί ποιήσωσι.] 'Fortaſſe τί ὅταν ϖοιήσωσι. Habet enim Plato λέγε, τί κ᾽ ϖοιῶντά σε. *Euthyph.* § 2. *Ed. Forſter.*' Of this tranſpoſition we approve, and it is fully ſupported by the paſſage from Plato.

Page 55. l. 11. καὶ ἅμα ϖάντων ἐπιμελεῖσθαι αὐτὸς.] 'Sic et apud Scriptores Sacros pronomen ſæpiſſime abundat. *Conf. Math.* iv. 16. v. 40. viii. 1. 23. *Act. Ap.* vii. 35.' The inſtances to which Dr. E. refers, are not ſimilar to the paſſage in Xenophon. Αὐλὸς, we know is, in appearance, often redundant in the ſacred writers; but it is always in the ſame caſe with ſome word in the preceding part of the ſentence; which is commonly ſaid to be a dative abſolute, and is really governed by a prepoſition underſtood. Any one of the paſſages, if produced, will ſhew the difference: τοῖς καθημένοις ἐν χώρᾳ κ᾽ σκιᾷ θανάτᾳ, Φῶς ἀνέτειλεν αὐτοῖς. The redundant αὐτὸς in St. Matthew is generally in the dative: but in the *Acts*, x. 38. it is found in the accuſative. Kypke has illuſtrated this uſage, by one paſſage from Herodotus, two from Arrian, and one from Joſephus. *Vid. Obſerv. Sac.* vol. ii. p. 54. As to the paſſage in Xenophon, we would expunge αὐτὸς, which, indeed, is rejected by Zeunius and Erneſtus, and is not to be found in ſeveral manuſcripts.

Page 64. l. 10. διατίθεσθαι εἶναι.] 'Pro εἶναι legendum arbitror ἄν ut vim potentialem inferat propoſitioni.' This alteration is unneceſſary, becauſe εἶναι is put for ἔξεινα.

Page 72. l. 9. εἰς τὰς εἱρκτὰς.] 'Verte, partes domorum prohibitas.' This interpretation he illuſtrates from the preface of Cornelius Nepos—"Neque ſedet mater familias niſi in interiore parte ædium, quæ γυναικωνῖτις appellatur." We take the liberty of referring our Readers to the *Crepundia Jani Gebhardi*, lib. iii. cap. 15.

Page 72. l. 10. ἅ, τε ὁ νόμος ἀπειλεῖ, &c.] 'Cautum eſt in Jure Attico, ἐὰν τὶς μοιχὸν λάβῃ, ὅτι ἄν βέληται, χρῆσθαι.' He refers to Taylor upon Lyſias, in whoſe note we find, that the laws of the Viſigoths were ſimilar in ſeverity, and almoſt in their terms, to the laws of the Athenians. By the *Lex Julia*, we add, among the Romans, the huſband might deſtroy an adulterer vilioris conditionis, ſi triduana denuntiatio interceſſiſſet: but the father

father might put to death his daughter, and an adulterer cujuſcunque conditionis, if they were detected in his own houſe, or in that of his ſon-in-law. Vide *Heineccii Elem. Jur. Civ.* part 7. par. 184.

Page 77. l. 1. δεινὸν πάλαισμα.] he properly tranſlates 'fori artificium,' and refers to the oration of Æſchines c. Cteſiphon—as Dr. E. in this, and ſome other inſtances, does not point out the page, we ſhall ſupply the omiſſion—See page 645, *edit. Cant. Demoſth.* vol. 2. by Taylor. Taylor adopts the explication from Victorius, and refers to his *Variæ Lectiones.*

P. 81. l. 8. μώμεο.]—'forſan μνώεο. Vid. *Odyſſ.* Λ. v. 287, et *Toup. Emend. in Suid.* part ii. p. 193.' Though we find not any notice of a typographical error, we ſuppoſe Dr. E. to have written μώεο—and ſo it is ſpelled by Toup, and by Zeunius, who, as well as Dr. E. refers to Toup, and admits the emendation.

P. 82. l. 1. ἐξελθόντα εἰς ἡσυχίαν] he properly tranſlates ἡσυχία, 'locus deſertus,' and refers us to his friend Taylor's Notes on the ſpeech of *Æſchines con. Timarch.* p. 51. which we correct for 41.

P. 84. l. 5. οἱ δὲ μισθῶτες με, ὑποχωριζόμενοι, &c.] This is one of the moſt difficult and moſt diſputed paſſages in Xenophon. Dr. E. is content with adopting the conjecture of Erneſtus, who would inſert μὴ. Dr. Owen abides by Suidas, and interprets ὑποχωριζόμενοι, obtrectantes, invidioſo nomine appellantes.—Our own opinion has long ago been formed, and in order to form it properly, we had read with care the very full and learned notes on the word in *Mœris*, *Thomas Magiſter*, and *Timæus in Lex. Platonic.* To theſe writers, whom Dr. Edwards does not appear to have conſulted, and to the note in Zeunius's edition of the Memorabilia, we refer the curious reader. Of Toup's emendation we do not approve, becauſe we have doubts as to the admiſſibility of μὴ, with the power which is here aſſigned to it. We agree with Erneſtus, in rejecting the opinion of Ruhnkenius, who would carry back ὑποχωριζόμενοι to φίλοι; though it is not impoſſible, we confeſs, that Xenophon ſhould, from inadvertency, have put this word into the mouth of Κακία. We do not agree with him in oppoſing Valckenaer, who would reject it from the text. But muſt this be done in oppoſition to the united authorities of *Suidas*, and the *Etymol. Mag.* where the word is interpreted διασύρειν, and where this paſſage is expreſsly referred to? Had other paſſages been produced, or hinted at, we ſhould have acquieſced; but we believe the text to have been early corrupted, and that Suidas, to ſolve the difficulty, had recourſe to this violent mode of interpretation *. Erneſtus tells

* We are aware that ſome words have different ſignifications in different writers or different ages.—Thus βληχρὸς is *ſtrong* in Pindar, and *weak* in Homer. *Vid. Etymol. mag. & Carm. Pindar. Fragm.* by *Schneider*, page 22.

us,

us, that Ariſtotle ſays the word may be applied ſo as to leſſen what is good or bad. True; but what are the inſtances by which Ariſtotle illuſtrates his poſition?—χρυσιδάριον for χρύσιον, ἱματιδάριον for ἱμάτιον, λοιδορημάτιον for λοιδορία, νοσημάλιον for νόσημα. See *Rhetor. cap. pr. lib. tert. in fine.* Theſe examples, ſurely, bear no reſemblance to κακίαν uſed as a term τῦ διασύρειν. On the whole, we accede to Valckenaer's conjecture, that ὑποχοριζόμενοι ſhould be expunged. Dr. Edwards properly tranſlates κακίαν vitioſitatem, on the authority of *Cic. Tuſc. Diſput.* vi. 15.

P. 84. l. 11. ἐργάτην ἀγαθὸν.] 'Hunc vocat D. Paulus ἐργάτην ἀνεπαίσχυντον. 2 *Tim.* ii. 15.' The word is *far* more emphatical and appropriate in St. Paul than in Xenophon, where it is general. The full force of it is moſt ably explained by Bos, in his Obſervationes Sacræ, from p. 36 to 38. 'The Deity is conſidered by the ſacred writers as the Dominus fundi, and the Præcones evangelii conferuntur cum operariis ſervis quorum operâ herus utitur in agro colendo, &c.' The metaphor in this paſſage has been diſputed; ſome underſtand cutting of marble, ſome the diſtribution made by a ſteward, &c. &c. We agree with Bos, who explains the words, 'probum eccleſiæ miniſtrum, qui non negligenter nec doloſe in arvo operatur'—this explanation may be illuſtrated by verſe 6, of the ſame chapter; and for fuller information, our Readers may conſult ſome very learned remarks in *Parkhurſt's Lexicon.*

P. 92. l. 1. οἰκήματα.] 'οἴκημα pro carcere poſuit *Dinarchus.* At pro lupinari *Æſchines. Suidas.* Vide quæ dixit *Cl. Taylor* ad *Marm. Sanduic.* p. 59.' The foregoing note ſeems to be partly a tranſcript, and partly a tranſlation from a note of Taylor on the ſpeech of Æſc. con. Timarch. p. 97.—οἴκημα is tranſlated by Zeunius, ſella meretricia; and Erneſtus has told us, οἴκημα, attice for πορνεῖον.

P. 102. l. 7. ἡγεμονικώτερόν τ' εἶναί σε πρὸς τὴν φύσιν ταύτην.] Dr. E. would read, πρὸς τὴν φυσικὴν φιλίαν ταύτην—φιλίαν is found in Stobæus for φύσιν—we retain the latter word, which Zeunius explains, amicitia naturalis. See his note.

P. 103. l. 3. μαλακῇ ] 'Dele—*Edwards*—ſed fortaſſe lectus ſuperior vel honoratior mollior erat—*Owen.*' We cannot help obſerving, that Erneſtus had rejected μαλακῇ, and that Zeunius ſays, 'fortaſſe ne μαλακῇ quidem eſt ſpurium quia non abhorret a vero, ſedem honoratiorem fuiſſe eandem molliorem.' No mention is made of Zeunius's interpretation, or of Erneſtus's opinion, in Dr. E.'s edition.

P. 108. l. 5 ἀλλ' ὅμως.] Dr. E. propoſes to read ἐπιπόνως, ex antitheſi, cum ſubſequantur voces ἀργῶς καὶ ἀνειμένως: we retain ὅμως. It refers to the preceding ſentences, in which the advantages of friendſhip are enumerated; but (great as they are) ſome, 'nevertheleſs, are diligent in cultivating trees, &c.'

P. 110.

P. 110. l. 6. τῦ ἐυρόντος.] 'Locus non ſollicitandus ſubint. Χρήμαλος—Anglicè, *at the price it brings.*'—Dr. Edwards is right; but is the interpretation entirely his own? The *Cod. Brodæi* et *edit. Paris* read ἐυρεθέντος—one manuſcript reads τυχόντος, which is approved by Erneſtus—but Zeunius ſays, utraque lectio eſt Gloſſema τῦ ἐυρόντος longe exquiſitiſſimi. Ευρισκειν autem, cum alibi tum apud noſtrum interdum dicitur de re, quæ reditum affert—ergo τὸ ἐυρὸν elliptice dicitur pro χρῆμα ἐυρὸν πόρον. He confirms this explanation by the following paſſage in the *Oeconomics, cap.* 20. ει πολὺ αργύριον ἐυρίσκοι, p. 128. edit. Zeun. We are ſorry to meet with ſo many inſtances of inattention and negligence in Dr. E. when he inſerts in his own notes the interpretations made by other critics. On the uſe of ἐυρισκειν, for comparare, ſee Taylor's Index to Lyſias.

P. 114. l. 4. ὥσπερ οἱ ἐχθροί.] Forſan οἱ ἄρχλοι Dr. E. Erneſtus had propoſed κάπροι, which is neither more nor leſs probable than ἄρκτοι. The ſenſe admits either reading; and at all events, we ſuſpect ἐχθροῖ.

P. 123. l. 10. οὐχ ὑπομένουσιν.] Nihil morantur, ſays the tranſlator. Dr. E. much more properly, 'non ſufferunt.' The Engliſh words, which occur in this note, ſhould, on every principle of delicacy, have been tranſlated into Latin. The learned reader has not forgotten the offenſive expreſſions which are introduced in a Latin page by Dawes, in his *Miſcellanea Critica*; and by Toup, in his *Epiſtola Critica*, addreſſed to the late Biſhop of Glouceſter.

P. 134. l. 11. κυνὸς λόγον.] 'Canis *fabulam.* Hæc fuit olim, ni male auguror, inter fabulas Æſopicas. Hoc equidem pro certo habeo, fabulas Æſopicas e veteribus vocari, λόγους. Sic Plato, ἐνλείνας τὰς τῦ Αισώπε λογας. *Phæd.* 4. *edit. Foſt.* This explanation of the word is juſt, and may be confirmed by the following paſſage in Ariſtotle—λόγος δὲ—οἷος ὁ Στησιχόρου πρὸς Φάλαριν, καὶ Αισώπου περὶ τῦ δημαγωγῦ. *Rhetor. lib.* 2. *cap.* 20. *edit. fol. vol.* 2.

P. 136. l. 4. ὑπερορίᾳ.] He tranſlates, 'extra fines,' and refers to Plato's works by Preux, p. 338. Zeunius underſtands it in the ſame manner, and derives it, not from ὄρεσι, with Erneſtus, but from ὁρίοις.

P. 141. l. 3. οὐχ ὅτι μόνον.] He would retain ὅτι, which Erneſtus would reject, and he refers to Hoogeveen de particulis gr. cap. 27. ſect. 7. λέγω is underſtood. In Zeunius we find the ſame opinion, the ſame interpretation, and the ſame reference. Is this coincidence quite caſual?

P. 150. l. 5. τάττειν ἅτε λέγειν.] 'Stobæus, ἅτε ἄγειν, nullus dubito veram lectionem eſſe Stobæanam'—τάττειν καὶ ἄγειν apud Xenophontem ſæpe conjunguntur. Vid. Cyrop. lib. 1. prope finem.' We agree with Dr. E. and *Zeunius* in writing ἄγειν.

P. 157. l. 4. ὅσα τε νόμῳ μεμαθήκαμεν.] Fr. Portus νόμῳ conſuetudine interpretatur recte more et inſtituto civitatis. *Zeun.*

P. 159. l. 2. ὦ γὰρ τοιῦτοι εἰσιν Ἀθηναῖοι.] 'Lege, ἰὼ. γὰρ eſt vox rationem reddens, ἰὼ eheu, tales enim ſunt Athenienſes. The common reading is intelligible and proper. If we read ἰὼ, γὰρ is miſplaced. But the alteration of οὖ is quite unneceſſary.

P. 161. l. ult. τὸ προσάτειν ] 'Lege προσάτλειν.' Would not the reader give Dr. E. credit for an ingenious conjecture, on ſeeing merely his note? But προσάτλειν is in Stobæus, and occurs in the text of the *Leipſic edition* of 1781.

*Ibid.* ἕκάστους ἐπιληδείως πράτλειν.] Edwards reads, ἃ χρὴ τὺς ἐπιληδείως, &c. We prefer the text of Zeunius, ἑκάστους τὰ ἐπιλήδεια πρατλειν.

P. 164. l. 6. σὲ στραληγήσαντ@.] 'Erneſtus Vir cl. Socratem hæc arbitratur diſputaſſe cum Pericle, cum jam a populo στραληγὸς eſſet creatus. Mihi aliter videtur, tum propter verba ipſius Periclis, § 5. Οὐ λανθάνεις με, &c. tum propter verba, εἰ τοίνυν, &c. p. 174. l. 14.' It muſt be remarked, that the Leipſic edition differs in the ſame manner from Erneſtus, directs his readers to the ſame paſſages in Xenophon, and adopts (or *propoſes*) the ſame emendation, στραληγήσανλος, with Dr. E.

P. 165. l. 7. οὐδὲ ἐν τούτοις Ἀθηναῖοι μεμπλοί.] 'Hæc verba Pericli *ad*judico.' The reaſon Dr. E. gives is, that the ſpeech of Pericles is ſtrongly expreſſive of indignation againſt the Athenians, and that he commends them ſparingly. We therefore ſuſpect a falſe print, and that the reading in Dr. E.'s note was *ab*judico. In aſſigning theſe words to Pericles, Dr. E. follows other editors. On this ſuppoſition the note is unneceſſary; but if he meant to take them from Pericles, we do not accede to the obſervation; for, angry as was this proud Athenian, he had allowed his countrymen much merit in the three preceding anſwers; and the context requires in this place ſome anſwer, and even the very anſwer which Pericles makes in favour of his countrymen.

P. 174. l. 9. μέχρι τῆς ἐλαφρᾶς ἡλικίας.] '*Per ætatem.* Ita vox ἡλικία reddi debet *Matth.* vi. 27. et *Luc.* xii. 25. potius quam per *ſtaturam.* Ita quidem redditur, *Joan.* ix. 21. 23. et *Ep. ad Hebr.* xi. 11.' We underſtand the paſſage in St. Matthew, as Dr. E. does, and as to the word, πηχυς, or cubit, applied to the meaſure of time, St. Matthew's words may be illuſtrated by the following lines in Mimnermus—

Πήχυιον ἐπὶ χρόνον ἄνθεσιν ἥβης
Τερπόμεθα. V. Brunck's Anal. vol. 1. p. 60.

Page 175. l. 5. ὠδέπω εἴκοσιν ἔτη γεγονώς.] As Dr. Edwards has not favoured his readers with any note upon this paſſage, we hope our readers will not be much diſpleaſed with us for laying before them the ſubſtance of ſome learned and acute obſervations

tions in the Inſcriptiones Atticæ of Corſini. The Athenian citizens, when they had finiſhed their 18th year, were enrolled under the general name of Ephebi; who again were divided into the Adſcriptitii in their 19th year, and the Ephebi in their 20th. Vehemens certe ſuſpicio mihi ſuboritur Adſcriptitios ipſos, Epheborum inſtar, in Athenienſium civium numero habendos eſſe: nec alio prorſus diſcrimine, Ephebos ab Adſcriptiis diſtingui poſſe, quam quod illi, ſecundum inter Ephebos annum agebant; hi vero, inter Ephebos nuper relati, primum, in hoc militiæ genere, annum agerent. Etenim, ut opportunius alibi demonſtravi, ii, qui octavum decimum annum ætatis impleverunt, Ephebis inſcribi tenebantur, donec viceſimum ætatis annum egreſſi in militum albo recenſerentur. After reaſoning upon this ſubject very ably, he thus concludes: Ephebi nomine in noſtro Marmore, aliiſque pluribus, cives illos indicatos exiſtimo, qui ſecundum hujus militiæ annum agerent; Adlectos vero, vel Adſcriptitios vocari cenſeo, qui nuper ejus Archontis anno labente Ephebis aliis adjecti, recenſque adſcripti forent; proximoque demum anno nobiliori Epheborum nomine appellandi, adjectaque tribuum ſerie recenſendi fuerant, p. 14. and 15.

P. 181. l. 1. *μυρίων οἰκιῶν.*] Dr. E. tells us, that the number of Athenians was 20,000, and refers us to Demoſth. adv. Ariſtogit. and the Veſpæ of Ariſtoph. l. 705. Before the Perſic war, it was 30,000, teſte Herodoto, lib. 5. The information given by this note is trifling. They who would underſtand the ſubject more fully, ſhould conſult Meurſius de Fortuna Athen. cap. 4. Hume's Eſſay on the Populouſneſs of ancient Nations, p. 458, &c. and above all, Wallis on the Numbers of Mankind, p. 54.

P. 191. l. 1. Dr. Edwards would lop off the concluſion of the eighth chapter, from *γραφαὶ* to *προσιέναι*—'p æcedentibus enim,' ſays he, 'non cohærent.' The tranſition, we confeſs, has not the uſual perſpicuity of Xenophon; but as the paſſage is quoted by Stobæus, and found in all the Manuſcripts, we cannot venture on the deſperate meaſure propoſed by our Editor. From *γραφαὶ* to *παρέχεσι* might be ſpared; but we cannot part with the opinion of Socrates, on the beſt ſite of temples.

P. 192. l. 12. *τὰ μὲν καλὰ τε καὶ ἀγαθὰ γιγνώσκοντα χρῆσθαι αὐτοῖς.*] The two laſt words Dr. E. thinks, 'ſenſum perturbant;' which, if they be rejected, becomes 'ſole meridiano clarior. "Omnes virtutes in ſcientia poſitas eſſe aſſeruit Socrates;" repugnante quidem Ariſtotele, apud quem virtus moralis *ἐν γνώσις ἀλλὰ πρᾶξις.*' This reaſoning is ſpecious, but not deciſive, or well-placed; for Socrates, as Erneſtus obſerves, does not enquire, in what virtue, abſtractedly conſidered, may conſiſt, but deſcribes a virtuous man. *Χρῆσθαι αὐτοῖς*, as oppoſed to *τὸν τὰ αἰσχρὰ εἰδότα ἐυλαβεῖσθαι*, is good ſenſe; and as to the conſtruction, *χρησθαι* obviouſly and properly depends on *ὥστε* underſtood.

P. 197. l. ult. ταχισ᾽ ἂν ἀπολέσθαι.] Dr. E. propoſes to read κάκισ᾽α—'opponitur enim, τῷ ὡς ἔτυχε, ζημιοῦσθαι.' Surely, certain and immediate deſtruction is ſufficiently oppoſed.

P. 211. l. 9. for προσφέρῃ in the middle voice, he would read προσφέρῃ. Dr. E. does not tell us, that προσφέρῃ is the old reading, which Stephens changed into προσφέρῃ, and which Zeunius has replaced in the text of his very correct edition. We take this opportunity of ſaying, that we do not approve of the cenſorious and contemptuous ſpirit, with which the Dutch Reviewer treats the criticiſms of Zeunius upon the Memorabilia of Xenophon. See Part 6. p. 116. In his Examination of the *Cyropædia* and the *Opuſcula Politica, Equeſtria, et Venetica*, publiſhed by the ſame editor, he has ſhewn more juſtice and candour. Vid. *Part* 5. p. 128. and 130.

P. 212. l. 6. τὴν ἴυγξα.] Dr. E. contents himſelf with quoting a well-known line from the ſecond *Idyllion* of *Theocritus*. He would have obliged his readers more effectually, by ſupporting or confuting the very learned and judicious note of *Erneſtus*, who confirms the interpretation of *Suidas*, where the ἴυγξ is ſaid to be put for the rhombus uſed in incantations, with the bowels, probably, of this bird faſtened to it, and rolled round with it.

P. 218. l. 6. ακᾶμενος.] Dr. Edwards would read ἀκεόμενος, in which he follows, but without acknowledgment, *Leunclavius*. We follow *Stephens*, and many other reſpectable critics, in ſuppoſing ἀκάμενος to be the name of a celebrated phyſician.

P. 224. l. 10. το ἐνωχεῖσθαι.] 'Hoc verbum, quod iis qui bene et frugaliter veſcuntur, tribuit Socrates, *Div. Petrus*, 2 *Epiſt.* ii. 13. ad epulones voluptuarios traduxit.' St. Peter uſed the word in a general and lax ſenſe; Socrates in a more limited ſignification, accommodated to his own derivation, which we will confirm by quoting at length a paſſage from *Athenæus*, which is partially cited by *Zeunius*. Τας δὲ ἐυωχίας ἐκάλουν κα ἀπὸ τὶς οχῆς, ἥ ἐσι τροφη, ἀλλ᾽ ἀπὸ τ κα᾽ τᾶυτα ἐῦ ἔχειν, ἐις ἃς δὴ συνίοντες, οἱ τὸ θεῖον τιμωντες, κ᾽ εις ἐυφροσύνην κ᾽ ἄνεσιν αυτοὺς μεθίεντες, τὸν μεν ποτον μέθυ, τον δὲ τᾶτο δωρησάμενον θεὸν, Μεθυμναῖον κ᾽ λυαῖον, κ᾽ ΕΥιον, κ᾽ ἰηίον προσηγόρευον. p. 363. Ariſtophanes, in the *Lyſiſtrate*, applies the word to the temperate meats of the Lacedemonians—

ὅπως αν οἱ Λάκωνες ἑνδοθεν
καθ᾽ ἡσυχίαν ἀπιωσιν ευωχημένοι. l. 1225.

But in the *Veſpæ*, he uſes it in the lax and general ſenſe of feaſting—

ὥσπερ καχρύων ὀνίδιον ευωχημένον. 1297.

And in the *Plutus*, Blepſidemus ſays,

ἐθέλω πλουτεῖν
ἐυωχεῖσθαι μετὰ τῶν παίδων
τής τε γυναικος. l. 604.

We

We would obſerve by the way, that μεθύω is uſed by *St. John*, ii. 10. for thoſe who drink freely, though not to any great degree of intoxication; and thus Lucian, when he would expreſs exceſſive drunkenneſs, adds Πάροινος to μέθυσος, as if the latter word were not emphatical enough. See vol. i. p. 171. *Ed. Reitz.*

P. 226. l. 8. ϗ τὸ ὅλον.] Κατὰ τὸ μέρος in prioribus libris dictum eſt; in hoc dicitur κατα το ὅλον, univerſim, *i. e.* in generi. Hinc mihi videtur, quod

I*mus* Liber continet officium hominis erga numen et ſeipſum.

II*dus*—Erga familiares, Scil. μέριον τὸ οἴκε.

III*tius*—Erga Cives: μοριον τῆς πολεως.

IV*tus* Liber erga omnes univerſim—ſeu omnium hominis officiorum repetitionem ſummariam.' E.

P. 235. l. ult. ϗ καλεῖται βασιλική.] Ita et *Div. Jacobus Epiſt.* ii. 8. νόμον τελεῖτε βασιλικόν. E. There is a ſimilar image in *Varro* de linguâ Latinâ. Quartus (explicandi gradus) ubi eſt aditus et initia *regis. Lib.* 4. p 7. *edit. Scal.* Βασιλικόν τι το καλλος εἶναι. *Xen. Symp. cap* 1. But on the word νόμους (for ſo we ſhould read) joined with βασιλεῖς, πόλεως. *Vid. Ariſt. Rhet. cap.* 2. *lib.* 3. with a ſenſible note in the Oxford edition.

P. 236. l. 6. τῶν δικαιῶν ἔστιν ἔργα, ὥσπερ τῶν τεκτόνων.] Εσλιν ου ἔργον ἀνθρώπε, κ. τ. λ. 'Opus igitur hominis eſt functio muneris animi rationi conſentanea, aut certe ratione non carens. *Ariſt. Eth. N. lib.* 1. *c.* 7.' The moſt curious interpretation we have ſeen of the word ἔργον is in a note of *Perizonius* on *Sanctius, de Vocibus Homonymis.* Perizonius there ſhews, that in Greek it often emphatically denotes 'quotidianum alicujus hominis *opus.*' This criticiſm, though not immediately applicable to the paſſage in Xenophon, deſerves to be pointed out and recommended to the learned reader. On the rhetorical ſenſe of ἐργασία, ſee *Capperon: Quintilian*, p. 239.

P. 244. l. 10. ϗ ὅιτε ὅμοιοι.] 'Mea quidem ſententia οἱ ὅμοιοι denotant επιτυχάνοντας,' et contrariantur τοῖς ατυχάνασι in hac ipſâ periodo. Legendum forſan ϗ οἱ μὲν ὁμοῖοι—οἵδε ἀτυχάνοντες. Οἱ ὅμοιοι ſæpe apud noſtrum, videntur eſſe *nobiles*, viri dignitate, virtute, et prudentiâ clari. *Xen. Hellenic.* iii. 3. *De Republ. Athen.* 1. 6.' This note, we ſuſpect, was ſuggeſted by the following obſervation of Zeunius. 'Sed ὅμοιοι, apud noſtrum omnino dicuntur, qui ſunt ejuſdem conditionis dignitatis, muneris. Conf. *Ind. Cyrop.* et *Opuſc. politic.*' Thus in the book *De Republ. Laced.* ὅσοι αν σύσκηνοι ὦσι τῶν ὁμοίων. But the interpretation is not original even in Zeunius. We therefore ſhall illuſtrate and confirm it by two quotations from the *Exercitationes Jacobi Palmerii.* The firſt occurs in his obſervations on the 4th book of *Xenophon's Hellenica, Steph. edit.* 289. ὗτος δὲ ην ϗ το εἰδος νεανίσκος καὶ τὴν ψυχην ἔρωστος, ε μέν τοι των ὁμοιων.

Το ὁμοίων videtur hic ſumi in *raro* ſignificatu, nimium, pro nobili et aliis nobilibus Spartiatis æquo vel pari. Ea vox, ut puto, fuit Laconibus peculiaris, certe alibi (credo) non occurrit in eo ſignificatu, ſaltem non memini me legiſſe. Sic inter Gallos, ordo quidam ſublimioris dignitatis dicuntur *les pairs*, pares, ὁμοῖοι, ea tamen voce in eo ſignificatu videtur uti *Demoſth. contra Leptinem.* The ſecond occurs in his criticiſms on this ſpeech of *Demoſthenes contra Leptinem, edit. Pr.* p. 323. Poſt 375. Μετὰ τῶν ὁμοίων.—ὅμοιοι apud Lacedæmonios aliud ſignificabat, quam apud alios Græcos. Sic enim vocabunt nobiles ſuos, ex quibus Senatus, ἡ γερουσια, conſtituebatur. We ſay in Engliſh, *the Peers.*

P. 245. l. 3. καὶ ἀτιμαζόμενοι.] 'Poſt verba ἄδοξοι καταγέλαστοι, et καταφρονούμενοι, frigidum eſt ἀτιμαζόμενοι—et curioſa Xenophontis felicitate prorſus indignum. Inſignem aliquam depravationem, quam nemo criticorum, quantum ſcio, ſuſpicatus eſt, huic verbo ſubeſſe nullus dubito; et felici conjecturâ uſus, textum in genuinam puritatem reſtituere poſſe confido.' He then aſcribes the common reading to the ignorance of the Librarians, and, with great probability, would ſubſtitute ἀτιμούμενοι. In ſupport of this reading, he quotes the following words from Taylor's Notes on the ſpeech of *Demoſthenes*, περὶ παραπρεσβειάς. "Ατιμαζω ad privatam infamiam, ad contumeliam ſignificandum eaſque ignominias, quæ homini ab homine, non a lege, infliguntur. Ατιμόω eſt vox ritualis et tota forenſis." In addition to the criticiſm of Taylor, which is ſupported by numerous authorities from the proſe writers, we would remind our Readers, that the ſame exactneſs is obſerved by the Attic poets.

Τους φεύγοντας καξαπατῶντας καὶ τυπτομένους ἐπίτηδες
Ἕλληνας ἀτιμώσας πρωτος. *Ariſtoph. in Pac.* v. 741.

Ψῆφον ἔθεντ' ἀλιμὼ
σαντες ἔριν γυναικῶν. *Æſchylus in Supp.* p. 652.

We know a learned friend, who in the 22d line of the *Antigone* of *Sophocles* would read ἀτιμώσας for ἀτιμάσας.

P. 252. l. 5. ἐπῆλθεν.] 'Obiter hic emendandus locus vexatiſſimus *Div. Petri* 2 *Epiſt.* i. 20. Pro voce ἐπιλύσεως quæ vehementer torſit theologos, lege ἐπελεύσεως, et plana fiunt omnia, et ſibi maxime congruentia.—The paſſage in St. Peter is extremely difficult, and we preſume not to decide upon the true reading, or the true ſenſe; but we refuſe to Dr. E. the merit of originality; for επελέυσεως had been propoſed by *Grotius*, by *Calvin*, by *Alexander More*, and by *Curcellæus.* We refer our Readers to a long and elaborate note in the *Curæ Philologicæ* of *Wolfius*, p. 169. vol. 5. On the word ἐπελθεῖν, Valckenaer has ſome acute and ingenious remarks, in the 464th page of his Notes on the *Phæniſſæ.*

P. 263. l. 2. ἵππον κὴ βὸν τῳ βελομενῳ δικαίως ποιήσαθαι.] Δικαίως dicitur vel de *re* vel de *perſona*, quæ muneri ſuo *par eſt.*

Ita *Lucianus de Hiſt. conſcrib.* § 39. Xenophontem vocat δικαῖον συγγράφεα, *i. e.* idoneum et hiſtoriæ conſcribendæ parem auctorem. Ad eam normam ſcriptum reperimus apud *Longinum*, § 44. παιδομαθεῖς εἶναι δικαίας δουλείας "videmur a pueritia imbuti eſſe juſtâ vel abſolutâ ſervitute." Latini multa cum liberalitate, voce, *juſtus*, ad eam rem utuntur: ut volumen, prœlium, exercitus dicuntur, *juſti.* Quicquid ſcil. functionem ſuam recipit; quicquid ſuo muneri reſpondet, et omnibus numeris eſt abſolutum; id apud eos ſcriptores *juſtum* dicitur.' We confirm Dr. Edwards's criticiſm by 'juſtum poema' in the 4th *Sat.* of *Horace*, *lib.* 1.

P. 290. l. 12. αυτίκα ] *Exempli gratiâ*, Vide *Xen. Cyropæd. lib.* v. p. 319. *Ed. Hutch. de Republ. Laced cap.* 1. § 3. The Leipſic editor had tranſlated this word *primum*, and then ſubſtituted *exempli gratiâ*; which explanation he alſo affixed to the word in the *Oeconomics* of *Xenophon*, publiſhed in 1782. Vid. cap. 19. p. 121. Dr. E. perhaps had ſeen one or both of theſe explanations. He acknowledges neither!

P. 293. l. 3. ἐκεῖνος γαρ λέγων, &c.] 'Hæc omnia uſque ad ſectionis finem, cujuſdam Scioli eſſe additamenta puto. Uncis ea incluſi, prorſus rejicere non auſus.' We applaud Dr. E.'s ſagacity in ſuſpecting the genuineneſs of theſe ten lines, and we approve of his diffidence in not excluding them from the text.

P. 296. l. 3. Δήλια.] 'Omnia Athenienſium feſta neutro genere efferuntur, abſque ulla exceptione, niſi me fallat memoria.' This perhaps is not entirely true. We have ſelected the following names of feaſts from *Meurſius* in his *Græcia Feriata*, βαλληΐδς—βορεασμοὶ—δωδεκάτη—ἑβδόμη—φελλὸς—theſe were Athenian feaſts. Thoſe of other nations were generally in the neuter; but there are exceptions—δαιλὶς, a feaſt among the Argives—ηλήις, among the Mileſians—χισσοτόμοι, among the Phliaſians—καρυατὶς, and διαμαστίγωσις, among the Lacedæmonians.

From the notes which we have produced, our Readers, probably, may be inclined to agree with us, in conſidering Dr. E. as a good ſcholar, rather than as a ſagacious critic. His erudition, certainly, was not very extenſive, nor very deep; and for many of his obſervations he is indebted to his friend Dr. Taylor. He ſeems, indeed, ambitious of acknowledging his obligations to the illuſtrious editor of Demoſthenes; and we wiſh that he had been equally attentive in mentioning ſome *other* ſources, from which his criticiſms are evidently derived. We cannot follow him in his favourite opinion, that the Memorabilia of Xenophon contain a complete and regular ſyſtem of ethics; but we readily allow his taſte and judgment in the explanation of ſome particular parts. As to the ſtyle of his Notes, we think it neither remarkably elegant, nor uniformly correct; but we are happy in finding it not deformed by any affectation of uncouth and unuſual phraſeology: we are yet more happy, in being able to in-

form our Readers, that it is quite exempt from that arrogance of temper, and that bitterneſs of invective, in which philological writers often indulge themſelves to a moſt unjuſtifiable and moſt odious exceſs. As no work of Xenophon is more generally read, or more juſtly admired, than the Memorabilia, we have employed our remarks upon the editor rather than the author. The limits of our Review will not permit us to enter minutely into the merits of the ſeveral manuſcript readings. Upon one of thoſe readings there is the following note:

P. 3. l. 1. ἐγίγνωσκεν ] ἐγίνωσκεν, Par. 1. et γίνωσκω ſæpius apud Xenophontem, ut dulcius et ἀττικωτερὸν, invenitur.' We differ toto cœlo from the very candid and learned writer, for γιγνωσκω, not γινώσκω, is the Atticiſm. Γίγνεται, ἀττικῶς. γίνεται, ἑλληνικῶς. *Mœris.* In confirmation of our opinion, which ought to be confirmed by every poſſible proof, when we differ from an authority ſo reſpectable as Dr. Owen's, we will produce a note of Valckenaer ſhewing, γίγνωσκειν et γιγνεσθαι veterem eſſe verborum ſcriptionem: 'firmat illam Latinam *Gigno.* Græcorum obſoleta forma fuit activa multiplex: γίνω· γείνω· γίνω· α γίνω, γιγίνω, γίγνω· ſicut a πέτω, πιπίτω, πιπτω· μένω, μιμένω, μίμνω.' This note is on the 136th line of the *Phœniſſæ.*

We ſuſpect that Valckenaer's obſervation had been read, though it is not acknowledged, by the acute writer of the *Fragmenta Grammaticæ Græcæ*, publiſhed in Edinburgh 1782, while we obſerve that he deduces πίπτω from πίτω, not πέτω. To put the ſpelling of γιγνώσκω beyond all doubt, we will quote a paſſage from *Heraclides*, quoted by *Euſtathius* on *Odyſſ.* M. p. 489. Γιγνωσκω διὰ τῶν δύο γ ὡς εἶναι τῷ λόγῳ ἀυλῶ, ἡμαρτημένον τὸ γινωσκω διὰ μόνε τε κατ' ἀρχην γάμμα. εἰ δὲ τέτο τετύπτον καθ' Ἡρακλείδην, πλαιοῖλο ἂν ὁμοίως, καὶ τὸ γίνεσθαι καὶ τα κατ' ἀυλὸ παύλά. οἷς οἱ μὲν παλαιοὶ, ἐν δυσὶ γάμμα ἐχρωῦλο, γίγνομαι λέγεύλες καὶ γιγνόμενοι, ὕυτω δὲ καὶ τὰ ἄλλα.

We will cloſe our reaſons for diſſenting from Dr. Owen, with quoting the note of Brunck on the 52d line of the *Ranæ* of *Ariſtophanes*—'ἀναγιγνώσκουλι μοι—ſic B. duplici γ, rectè—propriam hanc Atticis ſcripturam, tum codicum, tum veterum grammaticorum auctoritate utique apud comicum reſtitui.' Euſtathius, p. 1064. l 1. τὸ δὲ γινώσκειν, οἱ μὲν ὕσερον Ἀττικοὶ μετὰ τὴ δευτέρου γάμμα γιγνώσκειν φασιν ὡς τὴ ὁ κωμικὸς δηλοῖ, καθα, καὶ τὸ γινεσθαι, γγνεσθαι. He then refers to the note of Valckenaer, quoted above. We add, that Zeunius in all his indices to the works of Xenophon, of which he is the editor, preſerves the true ſpelling.

We ſhall conclude our remarks on the V. L. with the following obſervation of Mr. Belin, to which, after mature conſideration, we cannot accede: 'Page 69. line 7. Si verba, ῥιγῶς, θάλπες et πόνε, cum πρὸς επιθυμίαν congruere, viris quibuſdam

doctis, non viſa ſunt, in animo non habebant non ſolum *deſiderii*, ſed *cujus libet animi diſpoſitionis* επιθυμία eſſe ſignificationem, inde dici poteſt επιθυμία πόνε, θάλπες ἐίγες, *Cl. Belin.*' Upon comparing the criticiſm of Belin with the text of Xenophon, we, at firſt, did not abſolutely reject this interpretation; and we ſhall now endeavour *in ſome meaſure* to illuſtrate, for we mean not directly to juſtify it, by a paſſage in *Andronicus Rhodius* περὶ παθῶν: *Vid.* p. 739. *edit. Leyden.* Τα γενικωταλα πάθη τέσσαρα, λυπή, φόβος επιθυμία, ἡδονή. He then defines επιθυμία—επιθυμία ἐστὶν ἀλόγ῾ ὄρεξις ἢ δίωξις ωροσδοκωμένε ἀγαθυ—Επιθυμίας δὲ ἔιδη, ſays he, p. 742. are, Ὀργή. θυμος χόλ῾. πικρία. μηνις. κότ῾. ἔρως. ἵμερος. πόθ῾. δυσμένεια. δύσνοια. ἀψικορία. ριψοφθαλμία. σπανις. τραχύτης. ερισπροσαλπάθεια. Φιληδονία. Φιλοχρηματία. φιλοδιμια. φιλοζωία. φιλοσωματία. γαστριμαργία. οἰνοφλυγία. λαγνεια. Andronicus afterwards proceeds to explain theſe words in detail, and his explanation ſhews the latitude in which επιθυμία, when uſed to expreſs the animi affectus, is underſtood. We confeſs, however, that Belin's interpretation of Xenophon is circuitous, and ſomewhat harſh; and therefore, on the whole, we would underſtand the paſſage according to the plain and well-founded canon, which Erneſtus would apply to it.—'Subſtantiva ad idem verbum referri ſimul, quæ ſingula commode non poſſent, et ſufficere, quod proximum verbo locum occupet, ei accommodatum verbum eſſe.' Dorville, as Zeunius well obſerves, has moſt ably and moſt fully illuſtrated this uſage, in his notes on *Chariton*; and who can recollect without indignation, the injurious and illiberal treatment, which that great ſcholar has experienced from the author of a *Commentary* on the Epiſtle to Auguſtus, not quite ſo READABLE as David Hume's Hiſtory of England?—In grafting ſyſtem on writings, where ſyſtem, probably, was never deſigned, Dr. E. and Dr. H. ſeem *Arcades ambo.* The Fellow of Jeſus College was perhaps not quite equal to the Paſtor of "Thurcaſton's Low Vale," either in acuteneſs of reaſoning, or ingenuity of refinement; but *he* had too much good ſenſe to ſcoff at philology, and too much liberality to ſneer at his ſuperiors.

P—rr.

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ART. V. *Poems, chiefly in the Scottiſh Dialect.* By Robert Burns. 8vo. Kilmarnock printed. No Bookſeller's Name, nor Price. 1786.

POETA *naſcitur, non fit*, is an old maxim, the truth of which has been generally admitted; and although it be certain that in modern times many verſes are manufactured from the brain of their authors with as much labour as the iron is drawn into form under the hammer of the ſmith, and require to be afterwards ſmoothed by the file with as much care as the burniſhers

of Sheffield employ to give the laſt finiſh to their wares; yet after all, theſe verſes, though ever ſo ſmooth, are nothing but *verſes*, and have no genuine title to the name of *Poems*. The humble bard, whoſe work now demands our attention, cannot claim a place among theſe poliſhed *verſifiers*. His ſimple ſtrains, artleſs and unadorned, ſeem to flow without effort, from the native feelings of the heart. They are always nervous, ſometimes inelegant, often natural, ſimple, and ſublime. The objects that have obtained the attention of the Author are humble; for he himſelf, born in a low ſtation, and following a laborious employment, has had no opportunity of obſerving ſcenes in the higher walks of life; yet his verſes are ſometimes ſtruck off with a delicacy, and artleſs ſimplicity, that charms like the bewitching though irregular touches of a Shakeſpear. We much regret that theſe poems are written in ſome meaſure in an unknown tongue, which muſt deprive moſt of our Readers of the pleaſure they would otherwiſe naturally create; being compoſed in the Scottiſh dialect, which contains many words that are altogether unknown to an Engliſh reader: beſide, they abound with alluſions to the modes of life, opinions, and ideas, of the people in a remote corner of the country, which would render many paſſages obſcure, and conſequently unintereſting, to thoſe who perceive not the forcible accuracy of the picture of the objects to which they allude. This work, therefore, can only be fully reliſhed by the natives of that part of the country where it was produced; but by ſuch of *them* as have a taſte ſufficiently refined to be able to reliſh the beauties of nature, it cannot fail to be highly prized.

By what we can collect from the poems themſelves, and the ſhort preface to them, the Author ſeems to be ſtruggling with poverty, though cheerfully ſupporting the fatigues of a laborious employment. He thus ſpeaks of himſelf in one of the poems:

> 'The ſtar that rules my luckleſs lot,
> Has fated me the ruſſet coat,
> And damn'd my fortune to the groat:
> But, in requit,
> Has bleſt me with a random ſhot
> Of country wit.'

He afterward adds,

> 'This life, ſae far's I underſtand,
> Is an enchanted fairy land,
> Where pleaſure is the magic wand,
> That, wielded right,
> Makes hours and minutes hand in hand
> Dance by fu' light.

The

The magic wand then let us wield;
For ance [a] that five and forty's ſpeeld [b]
See crazy, weary, joyleſs Eild [c],
With wrinkled face,
Comes hoſtan, hirplan owre the field [d],
With creeping pace.

When ance life's day draws near the gloamin [e],
Then farewell vacant, careleſs roamin,
And farewell cheerful tankards foamin,
And ſocial noiſe;
And farewell dear deluding woman,
The joy of joys!'

Fired with the ſubject, he then burſts into a natural, warm, and glowing deſcription of youth—

'O life! how pleaſant in thy morning,
Young Fancy's rays the hills adorning!
Cold-pauſing Caution's leſſon ſcorning,
We friſk away,
Like ſchool-boys at th' expected warning,
To joy and play.

We wander there, we wander here,
We eye the roſe upon the brier,
Unmindful that the *thorn* is near,
Among the leaves;
And though the puny wound appear,
Short time it grieves.'

'None of the following works' [we are told in the Preface] were ever compoſed with a view to the preſs. To amuſe himſelf with the little creations of his own fancy, amid the toil and fatigues of a laborious life; to tranſcribe the various feelings, the loves, the griefs, the hopes, the fears in his own breaſt; to find ſome kind of counterpoiſe to the ſtruggles of a world, always an alien ſcene, a taſk uncouth to the poetical mind; theſe were his motives for courting the Muſes, and in theſe he found poetry its own reward.'

Theſe poems are chiefly in the comic ſtrain. Some are of the deſcriptive caſt; particularly *Hallow-e'en*, which contains a lively picture of the magical tricks that ſtill are practiſed in the country at that ſeaſon. It is a valuable relic, which, like Virgils eighth Eclogue, will preſerve the memory of theſe ſimple incantations long after they would otherwiſe have been loſt. It is very properly accompanied with notes, explaining the circumſtances to which the poem alludes. Sometimes the poems are in the elegiac ſtrain, among which claſs the Reader will find

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[a] Once. [b] Attained, or paſt. [c] Age. [d] Comes coughing, halting, [hirplan means rather walking crazily, through age and pain, than *lamely*, ſtrictly ſo called] over the field. [e] *Gloamin*, glooming; the cloſe of day; after ſun-ſet, before it be dark.

much

much of nature in the lines to a mouſe, on turning up her neſt with the plough, in Nov. 1785—and thoſe to a mountain-daiſy, on turning one down with the plough, in April 1786. In theſe we meet with a ſtrain of that delicate tenderneſs, which renders the Idylls of Madam Deſhouliers ſo peculiarly intereſting. Some of the poems are in a more ſerious ſtrain; and as theſe contain fewer words that are not pure Engliſh than the others, we ſhall ſelect one as a ſpecimen of our Author's manner.

The poem we have ſelected exhibits a beautiful picture of that ſimplicity of manners, which ſtill, we are aſſured, on the beſt authority, prevails in thoſe parts of the country where the Author dwells. That it may be underſtood by our Readers, it is accompanied by a Gloſſary, and Notes, with which we have been favoured, by a friend, who thoroughly underſtands the language, and has often, he ſays, witneſſed with his own eyes, that pure ſimplicity of manners, which are delineated with the moſt faithful accuracy in this little performance. We have uſed the freedom to moderniſe the orthography a little, wherever the meaſure would permit, to render it leſs diſguſting to our Readers ſouth of the Tweed.

*The Cotter's Saturday Night.* Inſcribed to R. A**** Eſq.

I.

My lov'd, my honour'd, much reſpected friend,
No mercenary Bard his homage pays;
With honeſt pride, I ſcorn each ſelfiſh end,
My deareſt meed, a friend's eſteem and praiſe;
To you I ſing, in ſimple Scottiſh lays,
The *lowly train* in life's ſequeſter'd ſcene;
The native feelings ſtrong, the guileleſs ways,
What A**** in a *cottage* would have been;
Ah! tho' his worth unknown, far happier there I ween!

II.

November chill blows loud with angry ſugh [g];
The ſhort'ning winter-day is near a cloſe;
The miry beaſts retreating from the pleugh;
The black'ning trains of craws [h] to their repoſe:
The toil-worn *Cotter* from his labour goes,
*This night* his weekly moil [i] is at an end,
Collects his *ſpades*, his *mattocks*, and his *hoes*,
Hoping *the morn* in eaſe and reſt to ſpend,
And weary, o'er the moor, his courſe does homeward bend.

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[f] *Cotter* is a labouring man, who rents a ſmall houſe from a farmer.

[g] *Sugh*, the ſound made by a ſtick, or other thing, drawn forcibly and quickly through the air; or the ſound of the air among trees, or other oppoſing objects. [h] Crows, or rooks. [i] Labour; *moil* is uſed in this ſenſe, in many parts of England.

III.

III.

At length his lonely *Cot* appears in view,
Beneath the ſhelter of an aged tree;
Th' expectant *wee things* [k], toddlan [l], ſtacher [m] through
To meet their *Dad*, with flightering [n] noiſe and glee.
His *wee bit ingle* [o] blinking [p] bonilie,
His clean hearth-ſtane, his thrifty *wifie*'s ſmile,
The liſping infant, prattling on his knee,
Does all his weary *kiaugh* [q] and care beguile,
And makes him quite forget his labour and his toil.

IV.

Belyve [r], the elder bairns [s] come dropping in,
At ſervice out, among the farmers roun' [t];
Some ca' [u] the pleugh, ſome herd, ſome tentie rin
A cannie errand to a neighbour town:
Their eldeſt hope, their *Jenny*, woman grown,
In youthful bloom, love ſparkling in her e'e [x],
Comes home perhaps to ſhew a braw [y] new gown,
Or depoſite her ſair-won [z] penny-fee [a],
To help her *parents* dear, if they in hardſhip be.

V.

With joy unfeign'd brothers and ſiſters meet,
And each for other's welfare kindly ſpiers [b].
The ſocial hours ſwift wing'd unnotic'd fleet;
Each tells the uncos [c] that he ſees or hears.
The parents partial, eye their hopeful years;
*Anticipation* forward points the view;
The *Mother*, with her needle and her ſheers,
Gars auld claes look amaiſt as well's the new [d];
The *Father* mixes all with admonition due.

VI.

Their maſter's and their miſtreſs's command
The younkers all are warned to obey;

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[k] *Wee*, a diminutive, little; a fondling expreſſion; wee-things, little ones. [l] *Toddlan*, a word only applied to denote the unſteady trot of children, who are beginning to walk. [m] *Stacher*, reel, a kind of ſtagger. [n] *Flightering*, unſteady, unequal, joyfully.

[o] *Wee bit ingle*, little fire; a diminutive, which has no ſynonym in Engliſh. [p] *Blinking* is applied to a ſmall light, that does not burn ſteadily, but breaks forth by interrupted flaſhes.

[q] *Kiaugh*, carking; diſtreſs of mind. [r] *Belyve*, by and by.

[s] *Elder bairns*, elder children. [t] *Roun'*, round. Frequently the *d* at the end of a word is not ſounded in the Scottiſh dialect; the *o* is alſo changed into *e*, as in pleugh, plough; elder, older; but more frequently the *o* into *a*, as hame, for home; amang, among, &c. [u] Drive. [x] *E'e*, eye. [y] *Braw*, a phraſe denoting finery, or the ſatisfaction finery produces. [z] *Sair won*, ſore won; won with labour. [a] *Penny fee*, wages; the word penny is here a diminutive, denoting that it is a ſmall matter.

[b] Enquires. [c] *Uncos*, new things that are uncommon.

[d] Makes old clothes look almoſt as well as new.

And

And mind their labours wi' an eydent[e] hand,
And ne'er, tho' out of ſight, to jauk[f] or play:
"And O! be ſure to fear the LORD alway!
And mind your *duty*[g] duely, morn and night!
Leſt in temptation's path ye gang aſtray,
Implore his *counſel*, and aſſiſting *might*,
They never ſought in vain that ſought the LORD aright."

VII.

But, hark! a rap comes gently to the door;
*Jenny*, wha kens the meaning of the ſame,
Tells how a neighbour lad[h] came o'er the moor,
To do ſome errands, and convoy her hame.
The wily mother ſees the *conſcious flame*
Sparkle in *Jenny*'s e'e, and fluſh her cheek,
With heart-ſtruck anxious care, enquires his name;
While Jenny, hafflins[i], is afraid to ſpeak;
Well pleas'd the mother hears, its nae wild worthleſs *rake*.

VIII.

With kindly welcome *Jenny* brings him ben[k];
A *ſtrappan youth*[l]; he takes the mother's eye;
Blythe *Jenny* ſees the viſit's no ill ta'en;
The father cracks[m] of horſes, pleughs, and kye[n].
The youngſter's artleſs heart o'erflows with joy,
But blate and laithfu'[o], ſcarce can well behave;
The mother, with a woman's wiles, can ſpy
What makes the *youth* ſae baſhfu' and ſae grave;
Well pleas'd to think her *bairn*'s reſpected like the lave[p].

IX.

O happy love! where love like this is found!
O heart-felt raptures! bliſs beyond compare!
I've paced much this weary, *mortal round*,
And ſage EXPERIENCE bids me this declare—

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[e] *Eydent*, conſtant, ſteady, uninterrupted diligence.

[f] *Jauk*, to neglect work; to loiter when unperceived.

[g] *Mind your duty*, forget not your *duty*; that is, your prayers: a very common expreſſion in Scotland. The whole of this ſtanza contains advice very ſtrongly inculcated, with great ſerioufneſs, in the manner here done by parents in that country. The tranſition to the firſt perſon is beautifully poetical; but it was naturally ſuggeſted by what the Author muſt have often ſeen in real life.

[h] *Lad*, a young man; applied only to thoſe in a low ſtation.

[i] *Hafflins*, heſitatingly; in ſome meaſure afraid; timidly.

[k] *Ben*—the inner part of the houſe is called *ben*, the outer part of it *but*—to bring one *ben* then, is to bring them from the door towards the place where the family ſit.

[l] *Strappan* youth, well-grown, well-ſhaped youth; promiſing ſtrength.

[m] *Cracks*, talks; generally means with glee, or cheerfulneſs.

[n] *Kye*, cows. [o] *Blate and laithfu'*, baſhful and backward.

[p] *Like the lave*, like the reſt; like other people; like her neighbours.

"If

" If Heaven a draught of heavenly pleaſure ſpare,
One *cordial* in this melancholly *vale*,
'Tis when a youthful, loving, modeſt pair,
In other's arms breathe out the tender tale,
Beneath the milk-white thorn that ſcents the ev'ning gale."—

XI.

But now the ſupper crowns their ſimple board,
The healthſome *porritch* [q], chief of Scotia's food:
The ſoupe their *only Hawkie* [r] does afford,
That 'yont the hallan [s] ſnugly chews her cood [t]:
The Dame brings forth, in complimental mood,
To grace the lad, her well hain'd *kebbuc*, fell [u],
And aft he's preſt, and aft he ca's it good;
The frugal *Wifie* garrulous, will tell,
How 'twas a towmond auld, ſin' lint was i' the bell [x].

XII.

The chearfu' ſupper done, with ſerious face,
They round the ingle [y] form a circle wide;
The *Sire* turns o'er, with patriarchal grace,
The big *ha' Bible*, ance his father's pride [z]:

His

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[q] *Porritch*, a meſs, made of oatmeal and water, boiled to the conſiſtence of a pudding, ſeaſoned with a little ſalt. This homely diſh, eat with a little milk, is the common food of moſt of the labouring people in Scotland, both at ſupper and breakfaſt.

[r] *Hawkie*, a common name of a cow. Their only hawkie, is their only cow. The ſoupe here mentioned is that to be eat, by way of ſauce, along with the porritch.

[s] *That 'yont the hallan*—beyond the hallan. *Hallan* is the name of a kind of fixed partition, or ſcreen, which, without being cloſed by a door, ſeparates the part of the houſe where the fire-place is, from another part, which is uſually without light. In this dark corner, behind the hallan, the cow, in poor people's houſes, is uſually kept. [t] Cud.

[u] *Her well hain'd kebbuc, fell.*—To hain, is to preſerve with care for ſome particular occaſion; uſually applied to the abſtaining from ſome favourite kind of food, that it may be ready for any particular purpoſe. *Kebbuc*, a cheeſe,—*fell*, ſharp, acrid, piquant—Her well-preſerved, piquant cheeſe.

[x] *How 'twas a towmond auld when lint was i' the bell*—how it was a twelvemonth old when flax was in the bloom. This way of fixing dates from the ſtate of vegetation of different plants is common in Scotland; it forms the natural rural kalendar. [y] Fire.

[z] Family worſhip, in theſe ſeats of innocence and peace, is ſtill univerſally practiſed; and after ſupper, that worſhip is as naturally expected, as the bottle and glaſſes after dinner at the tables of the Great. If any one of a family has been able to purchaſe a folio, or a quarto bible, it is carefully covered with leather, and reverently preſerved from father to ſon, for ſeveral generations, and is deemed a moſt honourable mark of diſtinction. It is here called the *ha'—hall Bible*,

His bonnet rev'rently is laid aſide,
His *lyart haffets* [a] wearing thin and bare:
Thoſe ſtrains that once did ſweet in Zion glide,
He wales [b] a portion with judicious care,
"And let us worſhip GOD!" he ſays with ſolemn air.

XIII.

They chaunt their artleſs notes in ſimple guiſe;
They tune their *hearts*, by far the nobleſt aim:
Perhaps *Dundee*'s wi'd warbling meaſures riſe,
Or plaintive *Martyr*'s, worthy of that name [c],
Or noble *Elgin* beets [d] the heav'n-ward flame,
The ſweeteſt far of Scotia's holy lays:
Compar'd with theſe, *Italian trills* are tame;
The tickled ears no heartfelt raptures raiſe;
Nae uniſon hae they with our CREATOR's praiſe.——

XVI.

Then kneeling down to HEAVEN'S ETERNAL KING,
The *Saint*, the *Father*, and the *Huſband* prays;
Hope ſprings exulting on triumphant wing,
That *thus* they all ſhall meet in future days:
There ever baſk in *uncreated rays*,
No more to ſigh, or ſhed the bitter tear,
*Together* hymning their CREATOR's praiſe,
In *ſuch ſociety*, yet ſtill more dear;
While circling time moves round in an eternal ſphere.

XVII.

Compar'd with *this*, how poor religion's pride,
In all the pomp of *method* and of *art*,
When men diſplay to congregations wide,
Devotion's ev'ry grace—except the *heart!*
The POWER, incens'd, the pageant will deſert,
The pompous ſtrain, the ſacerdotal ſtole;
But haply in ſome *cottage* far apart,
May hear, well pleas'd, the language of the *ſoul*;
And in his *book of life* the inmates poor inrol.

XVIII.

Then homeward all take off their ſev'ral way;
The youngling *cottagers* retire to reſt:
The parent-pair their ſecret homage pay,
And proffer up to Heaven their warm requeſt,

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*Bible*, becauſe it cannot be carried out of the houſe; and was uſually preſerved in a particular ſhelf, in the common-hall, in families of diſtinction, who had ſuch an apartment. Family worſhip is univerſally thus performed: firſt, a portion of the Pſalms is ſung by the whole family; then the maſter of the family devoutly reads a chapter of the Bible; and laſtly they all kneel down, and he prays extempore.

[a] *Lyart*, ſtreaked white, with other colours. *Haffets*, temples.
[b] Selects. [c] Names of different church tunes.
[d] *Beets*, furniſhes fewel to, feeds, keeps alive.

That

That HE who ſtills the *raven*'s clam'rous neſt,
And decks the *lily* fair in flow'ry pride,
Would, in the way *His Wiſdom* ſees the beſt,
For *them* and for their *little ones* provide;
But chiefly, in their hearts with *grace divine* preſide.

XIX.

From ſcenes like theſe, old SCOTIA's grandeur ſprings,
That makes her lov'd at home, rever'd abroad:
Princes and Lords are but the breath of Kings;
"An honeſt man 's the nobleſt work of GOD:"
And *certes*, in fair Virtue's heavenly road,
The *cottage* leaves the *palace* far behind:
What is a lordling's pomp? A cumbrous load,
Diſguiſing oft the *wretch* of human kind,
Studied in arts of hell, in wickedneſs refin'd!

XX.

O SCOTIA! my dear, my native ſoil!
For whom my warmeſt wiſh to heaven is ſent!
Long may thy hardy ſons of *ruſtic toil*,
Be bleſt with health, and peace, and ſweet content!
And O! may heaven their ſimple lives prevent
From *luxury*'s contagion, weak and vile!
Then howe'er *crowns* and *coronets* be rent,
A *virtuous populace* may riſe the while,
And ſtand a wall of fire around their much lov'd iſle.

Theſe ſtanzas are SERIOUS. But our Author ſeems to be moſt in his own element when in the ſportive, humorous ſtrain. The poems of this caſt, as hath been already hinted, ſo much abound with provincial phraſes, and alluſions to local circumſtances, that no extract from them would be ſufficiently intelligible to our Engliſh readers.

The modern ear will be ſomewhat diſguſted with the meaſure of many of theſe pieces, which is faithfully copied from that which was moſt in faſhion among the ancient Scottiſh Bards; but hath been, we think with good reaſon, laid aſide by later Poets. The verſification is in general eaſy; and it ſeems to have been a matter of indifference to our Author in what meaſure he wrote. But if ever he ſhould think of offering any thing more to the Public, we are of opinion his performances would be more highly valued were they written in meaſures leſs antiquated. The few Songs, Odes, Dirges, &c. in this collection, are very poor in compariſon of the other pieces. The Author's mind is not ſufficiently ſtored with brilliant ideas to ſucceed in that line.

In juſtice to the Reader, however, as well as the Author, we muſt obſerve that this collection may be compared to a heap of wheat careleſsly winnowed. Some grain of a moſt excellent quality is mixed with a little chaff, and half ripened corn. How many ſplendid volumes of poems come under our review,

in

in which, though the mere chaff be carefully ſeparated, not a ſingle atom of perfect grain can be found, all being light and inſipid. We never reckon our taſk fatiguing, when we can find, even among a great heap, a ſingle pearl of price; but how pitiable is our lot, when we muſt toil and toil, and can find nothing but tireſome uniformity, with neither fault to rouſe, nor beauty to animate the jaded ſpirits! An—n.

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ART. VI. *Experiments and Obſervations relating to* Acetous Acid, Fixable Air, Denſe Inflammable Air, Oils, and Fuel; the Matter of Fire and Light, Metallic Reduction, Combuſtion, Fermentation, Putrefaction, Reſpiration, and other Subjects of Chemical Philoſophy. By Bryan Higgins, M. D. 8vo. 6s. Boards. Cadell. 1786.

THE Author informs us in the Preface, that the publication of this work has been long delayed, from various cauſes, of which he gives an account; that more than a third part of it was printed the beginning of laſt year; that all that was new in the experiments, or intereſting in the doctrines, was introduced in his public courſe of chemiſtry, which commenced in the April following (viz. in 1785); and that, by this communication to a very reſpectable and ſcientific audience, he has deprived the work of every advantage of novelty. Theſe particulars are doubtleſs proper to be known, in caſe of any diſputes ariſing about priority of diſcovery; but we cannot ſuppoſe that the work has loſt any advantage of novelty, or ſuffered any diminution of its importance, with reſpect to the Public at large. The philoſopher will ſee in it many abſtruſe objects elucidated; he will find particularly the chemical conſtitutions of the aeriform fluids, and of animal and vegetable productions, of which thoſe fluids or their principles make the diſcriminating component parts, inveſtigated with ſagacity, and placed in a light different from that in which they have hitherto appeared.

The immediate ſubject matter, in moſt of the leading experiments, is the acetous acid. The Doctor begins with the method of obtaining this acid, in its pureſt and moſt concentrated ſtate; *viz.* diſlodging it, by means of vitriolic acid, from pure acetated alcali (commonly called *terra foliata tartari*, and *ſal diureticus*), in like manner as the nitrous and marine acids are procured from their reſpective neutral ſalts: he gives full directions for conducting the operation with ſucceſs, pointing out the precautions which the nature of the vegetable acid renders neceſſary, eſpecially where the quantities operated upon are large, as was the caſe in almoſt all his own experiments.

This acid, which, by itſelf, is more volatile than water, and diſtils unchanged, he combines with fixed alcalies, lime, magneſia, and other bodies capable of detaining it in the fire till it receives

receives a degree of ignition; examining attentively the changes produced by that heat, and collecting, in a proper apparatus, the ſubſtances that are detached by it. The general reſult is (for our limits will not admit of our entering into particulars), that by ignition the acid is decompoſed, and new products generated; that fixable air, inflammable air, and an oil, come over into the receivers; that a part remains combined with the fixed matter employed, in the ſtate of black combuſtible coal or tinder; and that no part ariſes, or remains, in the form of acetous acid.

From theſe, and other phenomena, it is inferred, that phlogiſton is one of the component parts of this acid, and enters its compoſition in great quantity:—that, as fire is the only matter which has acceſs to the acid in the circumſtances of theſe experiments, and as the products iſſue cold, though the maſs which they riſe from be red-hot, a large quantity of this fire is abſorbed, fixed, or rendered latent:—that ſome principle or principles of the acid, combined with the fire, make the fixable air:—that ſo much of the remainder as combines in like manner with fire, forms the inflammable air:—that the part which eſcapes the neceſſary ignition makes the oil; whilſt that which is obſtinately retained in a fixed body makes the coaly ſubſtance. Not that theſe ſeveral products reſult from ſo many diſtinct or appropriated ſubſtances in the acid: the principle of acidity is contained in them all, and their differences depend upon proportions, and other circumſtances, which the Author ſucceſſively developes.

Every portion of the acid requires its due charge of fire before it can be tranſmuted at all; nor does the acid affect any intermediate ſtate between that of acetous acid and the elaſtic fluids, which, with the due charge of fire, it never fails to produce. Some of the phlogiſtic part is indeed expended in forming oil, while the remainder forms inflammable air, and therefore the part of the acid that is turned into inflammable air may be ſaid to affect the intermediate form of oil; but ſtill the oil appears to be nothing more than the ſubſtance of inflammable air before it combines with fire, for on being puſhed through red-hot ſand, &c. it is almoſt wholly convertible into inflammable air, and the quantity of that air originally obtained from the acetous acid is in proportion to the heat which it undergoes.

Though the oil becomes *inflammable air* when duly heated, without communication with the atmoſphere, it produces *fixable air* when pure air is admitted to it; and the quantity of fixable air produced is in proportion to the quantity of pure air admitted, conjointly with the degree of heat. Thus the quantities of all the products vary according to the circumſtances in which the operation is conducted, and a diminution in one is accompanied with an increaſe of another; a proof, that the ſame matter,

which is an eſſential component part of one, is equally ſo of another.

More of the fixable air is retained in the alcaline or earthy reſidue (which are thereby rendered mild), than is expelled along with the inflammable air; and in the air thus retained, the matter of fire does not appear to be combined in ſo great quantity as in that which aſſumes the elaſtic form. Fixable air, the Doctor obſerves, never becomes elaſtic, till it is ſaturated with fire, and unreſtrained by other matter. For in detaching it from mild alcalies, chalk, &c. ſo as to produce it in the elaſtic ſtate, we are obliged to uſe fire, and we obſerve a great *expenditure* of fire; for the body never conceives near ſo much heat, while it emits fixable air, as it would, in the ſame fire, if it contained none of this matter; and that the fire thus expended upon the elaſtic fluid does not deſert it, but remains combined, appears from hence, that the veſſels, which it runs through in a rapid ſtream, are not warmed by it. This theory is confirmed by the action of acids; which, in uniting with *pure* alcali, quicklime, or calcined magneſia, cauſe great heat, and conſequently emit a great quantity of fire; whereas, in the detaching of fixable air by them from the ſame ſubſtances, little or no heat is diſcoverable, all the emitted fire being transferred to the fixable air, and conſumed in giving it elaſticity: when any heat *is* diſcoverable in theſe operations, it proves only, that more fire is emitted by the acid and the ſolvend in their union, than is neceſſary for the conſtitution of that quantity of fixable air which iſſues in the elaſtic form.

*That* matter which, in combination with fire, makes inflammable air, is ſtrongly attracted by fixed alcali, lime, and magneſia, and forms, with each of them, a ſpecies of coal or fuel; and theſe very ſoluble ſubſtances, by this union with the matter of inflammable air, become indiſſoluble. From this artificial fuel, ſimilar to charcoal or coak, the Author elucidates the compoſition of the natural. Thus charcoal appears to conſiſt of phlogiſton, and the acid principle of acetous acid, with a ſmall quantity of alcali and calcareous earth.—Hence all fuels, and combuſtible bodies, yield in combuſtion fixable air, and by due ignition in cloſe veſſels inflammable air; which laſt produces alſo fixable air in *combuſtion*, that is, with the acceſſion of pure air.

The effect of nitrous acid, upon the oil obtained in theſe operations, is pretty remarkable; they mutually decompoſe each other, without the aid of extraneous fire; the phlogiſton of the oil uniting with the acid principle of the nitrous acid into nitrous air; while the pure air, which is the other component part of the nitrous acid, unites with the vegetable acid principle of the oil into fixable air; and as a great quantity of fire is liberated or emitted during their action on each other, it is concluded

cluded that the quantity of fire originally combined in them is much greater than can be retained by their new products. The nitrous acid undergoes a ſimilar decompoſition in many other operations; for, in metallic ſolutions, and all others in which this acid is phlogiſticated, in all calcinations and combuſtions of phlogiſtic bodies in which nitrous ſubſtances perform the office of atmoſpheric air, and in every known inſtance of the phlogiſtication of nitrous acid, and the formation of nitrous air from it, the acid principle loſes a part, or the whole, of its pure air, and, by receiving phlogiſton inſtead of it, becomes nitrous air. The quantity of nitrous air diſengaged depends upon the capacity of the materials to retain pure air preferably to the nitrous, and in theſe the conſequent predominance of pure air may be eaſily diſcovered: hence the nitrated calces of metals yield abundance of pure air, and little or no acid. Nitrous air, on the admixture of pure air, becomes nitrous acid ſomewhat phlogiſticated: a great part of the pure air is expended in the formation of the acid, while the remainder contributes to the formation of water: in this, as in every other inſtance of the entry of pure air into a phlogiſtic body, heat is generated, or fire is emitted, ſhewing, that the nitrous air and pure air, ſeverally, hold more fire than the nitrous acid and water formed of them can retain.

All the other acids conſiſt, in like manner, of an acid principle (which has no character of acidity by itſelf) united with pure air. When vitriolic acid is employed in forming ſulphur, its pure air is expended in producing fixable air or water: the acid character of the reſidue is loſt in the union with phlogiſton, and cannot be reſtored till pure air is adminiſtered; which pure air combines partly with the acid principle, and partly with the phlogiſton, forming acid with the one, and water with the other, for theſe are the two products of the combuſtion of ſulphur. Vitriolated alcali, in long continued fuſion, retains obſtinately its pure air, and conſequently its acid character, that is, the alcali continues neutralized: on adding a little charcoal, the air is abſorbed or extricated, and a hepar is produced, which, though containing nearly all the acid principle that belonged to the vitriolated alcali at firſt, is no longer neutral, but ſtrongly alcaline and cauſtic: this alcaline maſs, expoſed to pure air, greedily imbibes it, and, without the concurrence of any other matter, the acid reſumes its proper characters, the ſalt becoming again neutral. The Author purſues this mode of induction through the other acids, and ſhews, that all the phenomena agree with theſe notions, and with no others.

The Doctor ſupports the foregoing inductions by experiments on metallic bodies, which afford at the ſame time a new theory reſpecting their calcination and reduction. He finds that metals in calcination imbibe pure air, but do not part with their phlo-

giſton, the air uniting with the phlogiſton into a ſtate approaching to water; and that the phlogiſtic ſubſtance employed for the *revival* of the metal, imparts nothing to the metal itſelf, being wholly expended in uniting with the air of the calx, and facilitating its expulſion by converting it perfectly into water and fixable air. He examines ſeveral late experiments, which have been otherwiſe interpreted, and ſhews, that they are perfectly agreeable to theſe notions. In the ſolution of metals by acids, a part of the acid is decompoſed, its pure air uniting with the metal, and the remainder appears in a phlogiſticated ſtate merely from this abſtraction of air. In Dr. Prieſtley's experiment of reviving calx of lead by inflammable air, the phlogiſton of that air only extricates the pure air of the calx, by uniting with it into water. He gives ſeveral experiments of the decompoſition of acetous acid with calces of lead by ignition, ſimilar to thoſe with alcaline ſalts and earths; and one, in which the acid was totally converted, by uniting with the pure air of the calx, into fixable air and water, without the aſſiſtance of fire, barely by triturating litharge with ſo much of the diluted acid as was barely ſufficient to make it look white: the maſs when dried was found, like white lead, to yield no acid, but fixed air in abundance, mixed with a ſmall quantity of inflammable air, both by ſolution and diſtillation.

With reſpect to the compoſition of the aeriform fluids, ſo often mentioned, the Author's notions appear upon the whole to be, That they all conſiſt of one or more *gravitating principles*, combined with *fire*; to which laſt their elaſticity, or the mutual repulſive power of their parts, is owing: that the gravitating matter of pure or empyreal air is no other than the aerial principle of nitrous acid: that the gravitating baſis of fixable air conſiſts of the ſame aerial principle, united with the acid principle of acetous acid: that inflammable air, at leaſt the denſe or heavy ſpecies which charcoal and other combuſtible bodies produce when urged with intenſe fire, has for its baſis the ſame acid principle united with phlogiſton: that the proportions of the ingredients are not conſtant and invariable, either in the fixable or inflammable airs, the differences in ſpecific gravity and other properties indicating a diverſity in this reſpect: the denſeſt inflammable air produces in combuſtion the greateſt quantity of fixable air, and the light inflammable air of metallic ſolutions yields none. With regard to the pure acetous acid, its component parts appear to be, its proper acid principle, pure air or rather the gravitating baſis of air, phlogiſton, and water.

The Doctor has given, throughout, various meaſurements and calculations of the quantities of the products, in ſupport of his general inductions. He ſeems, however, to lay no particular

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ſtreſs upon theſe, and makes a decent apology for any errors that may be found in them.

'It is impoſſible' (he ſays) 'for a man, who muſt employ the greateſt part of his time in the duties of a profeſſion which allows no vacation, to ſuperintend ſuch experiments as thoſe on which the foregoing eſtimates have been founded, from the commencement to the termination; and being thus circumſtanced, I think it neceſſary to obſerve, that ſome part of every one of theſe experiments and menſurations was committed to the care and fidelity of my operator. If any unintentional errors on his part ſhould happen to conſpire to the encreaſe of mine, my eſtimations may be very incorrect in regard to the proportions; but I have no reaſon to doubt that the notions of metallic reduction, of the principles of fixable air and denſe inflammable air, and of all that does not depend on accurate proportion, will abide the teſt of future experience.'

We hope the Doctor's operator has been more attentive to his duty than the compoſitor, or corrector of the preſs, whoſe miſtakes are more apparent, and pretty numerous; and have a like apology made for them. Beſide thoſe which are noticed in the *errata*, and which, in general, are of no great conſequence, we ſhall mention one or two that happen to occur to us at the moment, and which may poſſibly embarraſs an ordinary reader. In page 228 and 29, we are told, that a cubic inch of one ſpecies of air weighs 260 grains, and of another leſs than 2 grains; that the medium of thoſe two numbers is 23; and that if one cubic inch weighs 23 grains, 46 cubic inches will weigh between 10 and 11 grains: theſe apparent abſurdities have ariſen merely from the omiſſion of a point of ſeparation between integers and decimals; for 260 and 23, read 2.60 and 2.3, that is $2\frac{6}{10}$ and $2\frac{3}{10}$, and the whole becomes clear and conſiſtent.—The other inſtance we allude to is in p. 181. The Author has ſhewn in the preceding pages, that as pure air is a conſtituent part of metallic calces, the tranſition of metal, by ſolution, to the ſtate of ſalt or calx, can take place only as the menſtruum ſupplies this air; that in making aqua regia with a mixture of nitrous and marine acids, a part of the nitrous acid is decompoſed, nitrous air being emitted, and its pure air united with the marine acid, which, in virtue of this acceſſion of air, becomes capable of diſſolving metals that reſiſt the common ſpirit of ſalt. On this occaſion he communicates a very remarkable fact, that when two pounds of manganeſe are mixed with two or three of ordinary ſpirit of ſalt, the elaſtic fluid that iſſues in diſtillation may be nearly all condenſed in a ſolution of fixed vegetable alcali; and that the ſolution will then yield a conſiderable quantity of *nitre* as well as ſea ſalt: he finds alſo that manganeſe, by mere ignition, yields a great quantity of pure air with phlogiſtic air, as nitre does; and from theſe facts he concludes, that manganeſe contains nitrous acid, or its principles, in great quantity. 'But'

(continues he) 'red lead, and the calces which ſerve to dephlogiſticate marine acid, or to produce the change expreſſed by that word, yield alſo pure and phlogiſtic air by ignition; and I venture to prognoſticate, that *nitrous* acid will alſo be found *in theſe caſes* to make aqua regia with marine acid, excluſive of any change producible in the marine acid by its union with empyreal air ſupplied from the calx.' Now, we apprehend the Doctor meant to ſay, not that *nitrous acid*, but that *calces of lead* would be found to make aqua regia with marine acid, and we can eaſily conceive how the perverſion of his meaning may have happened: he might write *nitrous acid* by miſtake, and inadvertently inſert the correction *theſe calces* in a wrong place; and the printer might retain both, changing *theſe calces* (which would have been nonſenſe in the ſituation where he found them) into *in theſe caſes*. Whatever may be in this conjecture, if the Author really means that *calces of lead are capable of producing nitrous acid*, it is a pity that ſo important a hint ſhould be loſt to any of his readers.

After the particular facts and inductions, of which we have been endeavouring to give a conciſe view, the Doctor proceeds to enquiries of a more extenſive and abſtruſe nature, reſpecting the matter of fire, and the explication of various operations and phenomena in which it is concerned. His primary notions of fire are, That it is ſubject to laws of attraction, by which it is fixed or diſguiſed in divers ſubſtances; and that it produces heat, or acts as fire, only when it is extricated from other kinds of matter:—that its homogeneal parts repel each other:—that the mutual repulſion of its own parts, and their attraction to other matter, is the cauſe of the elaſticity of aeriform fluids:—that the charges of repellent matter, by which the gravitating particles form elaſtic fluids, are diſtinct atmoſpheres of fiery matter, in which the denſities are reciprocally as the diſtances from the central particles, in a duplicate or higher ratio:—that the repulſion of the particles of fire limits the quantity that can be engaged by bodies;—and that the matter of fire limits the quantities in which aeriform fluids, and other bodies containing it, can combine chemically. He conceives *light* to conſiſt in a *rapid projectile motion* of the fiery fluid, independent of its denſity; and *heat* to conſiſt in the *denſity of the fluid*, independent of progreſſive motion.—We cannot ſay that we are entirely ſatisfied with this laſt notion; for if *heat* and *light* be one and the ſame fluid, differing *only* in velocity, ſome reaſon ought to be aſſigned for that immenſe difference, and for the immenſe differences alſo in their permeation of groſs bodies.

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ART. VII. *An Eſſay on the Life, Character, and Writings, of* Dr. Samuel Johnſon. By Joſeph Towers, LL. D. 8vo. 2s. 6d. Dilly. 1786.

IN this Eſſay, we have a ſober and candid *Review* of Dr. Johnſon's literary and perſonal character. The judicious Author allows all his excellencies to their full extent; but he is not blind to his imperfections. He communicates, indeed, to the Public, little that is new; but he adverts, with ſtrict attention, to whatever has been advanced by the various biographers, and the numerous relators of anecdotes concerning this great and ſingular man,—this *noble Heteroclite*, as ſome one hath, not unaptly, ſtyled him.

After a ſeries of juſt criticiſms on Dr. Johnſon's writings, throughout, interſperſed with occaſional remarks on his genius, principles, prejudices, &c. our Author, in the concluſion of his Eſſay, thus briefly *ſketches*, to uſe his own expreſſion, the *principal features* of the Doctor's character:

'He poſſeſſed extraordinary powers of underſtanding, which were much cultivated by ſtudy, and ſtill more by meditation and reflection. His memory was remarkably retentive, his imagination uncommonly vigorous, and his judgment keen and penetrating. He had a ſtrong ſenſe of the importance of religion; his piety was ſincere, and ſometimes ardent; and his zeal for the intereſts of virtue was often manifeſted in his converſation and in his writings. The ſame energy, which was diſplayed in his literary productions, was exhibited alſo in his converſation, which was various, ſtriking, and inſtructive; and, perhaps, no man ever equalled him for nervous and pointed repartees.

'The great originality which ſometimes appeared in his conceptions, and the perſpicuity and force with which he delivered them, greatly enhanced the value of his converſation; and the remarks that he delivered received additional weight from the ſtrength of his voice, and the ſolemnity of his manner. He was conſcious of his own ſuperiority; and when in company with literary men, or with thoſe with whom there was any poſſibility of rivalſhip or competition, this conſciouſneſs was too apparent. With inferiors, and thoſe who readily admitted all his claims, he was often mild and gentle: but to others, ſuch was often the arrogance of his manners, that the endurance of it required no ordinary degree of patience. He was very dextrous at argumentation; and, when his reaſonings were not ſolid, they were at leaſt artful and plauſible. His retorts were ſo powerful, that his friends and acquaintance were generally cautious of entering the liſts againſt him; and the ready acquieſcence of thoſe with whom he aſſociated, in his opinions and aſſertions, probably rendered him more dogmatic than he might otherwiſe have been. With thoſe, however, whom he loved, and with whom he was familiar, he was ſometimes cheerful and ſprightly, and ſometimes indulged himſelf in ſallies of wit and pleaſantry. He ſpent much of his time, eſpecially in his latter years, in converſation: and ſeems to have had ſuch

an averſion to being left without company, as was ſomewhat extraordinary in a man poſſeſſed of ſuch intellectual powers, and whoſe underſtanding had been ſo highly cultivated.

'He ſometimes diſcovered much impetuoſity and irritability of temper, and was too ready to take offence at others; but when conceſſions were made, he was eaſily appeaſed. For thoſe from whom he had recei ed kindneſs in the earlier part of his life, he ſeemed ever to retain a particular regard, and manifeſted much gratitude towards thoſe by whom he had at any time been benefited. He was ſoon offended with pertneſs, or ignorance: but he ſometimes ſeemed to be conſcious of having anſwered the queſtions of others with too much roughneſs; and was then deſirous to diſcover more gentleneſs of temper, and to communicate information with more ſuavity of manners. When not under the influence of perſonal pique, of pride, or of religious or political prejudi es, he ſeems to have had great ardour of benevolence; and, on ſome occaſions, he gave very ſignal proofs of generoſity and humanity.

'He was naturally melancholy, and his views of human life appear to have been habitually gloomy. This appears in his *Raſſelas*, and in many paſſages of his writings. It was alſo a ſtriking part of the character of Dr. Johnſon, that with powers of mind that did honour to human nature, he had weakneſſes and prejudices that ſeemed ſuited only to the loweſt of the ſpecies. His piety was ſtrongly tinctured with ſuperſtition and we are aſtoniſhed to find the author of the Rambler expreſſing ſerious concern, becauſe he had put milk into his tea on a Good Friday. His cuſtom of praying for the dead, though unſupported by reaſon or by ſcripture, was a leſs irrational ſuperſtition. Indeed, one of the great features of Johnſon's character, was a degree of bigotry, both in politics and in religion, which is now ſeldom to be met with in perſons of a cultivated underſtanding. Few other men could have been found, in the preſent age, whoſe political bigotry would have led them to ſtyle the celebrated JOHN HAMPDEN "the zealot of rebellion;" and the religious bigotry of the man, who, when at Edinburgh, would not go to hear Dr. Robertſon preach, becauſe he would not be preſent at a Preſbyterian aſſembly, is not eaſily to be paralleled in this age, and in this country. His habitual incredulity with reſpect to facts, of which there was no reaſonable ground for doubt, as ſtated by Mrs. Piozzi, and which was remarked by Hogarth, was alſo a ſingular trait in his character; and eſpecially when contraſted with his ſuperſtitious credulity on other occaſions. To the cloſe of life, he was not only occupied in forming ſchemes of religious reformation, but even to a very late period of it, he ſeems to have been ſolicitous to apply himſelf to ſtudy with renewed diligence and vigour. It is remarkable, that, in his ſixty-fourth year, he attempted to learn the Low Dutch language; and, in his ſixty-ſeventh year, he made a reſolution to apply himſelf "vigorouſly to ſtudy, particularly of the Greek and Italian tongues."

'The faults and the foibles of JOHNSON, whatever they were, are now deſcended with him to the grave; but his virtues ſhould be the object of our imitation. His works, with all their defects, are a moſt valuable and important acceſſion to the literature of England. His political writings will probably be little read, on any other account than

than for the dignity and energy of his ſtyle; but his Dictionary, his moral eſſays, and his productions in polite literature, will convey uſeful inſtruction, and elegant entertainment, as long as the language in which they are written ſhall be underſtood; and give him a juſt claim to a diſtinguiſhed rank among the beſt and ableſt writers that England has produced.'

We ſhall conclude this article with another, but *more brief*, ſketch of Dr. Johnſon's character, ſtruck out, *currente calamo*, a few years before his death, by a celebrated *northern* writer, in a familiar letter to a literary friend:

"I think not highly of his learning, but very highly of his underſtanding; as a critic he is to be read with caution: his ſtrong ſenſe often directs him right; he is then great; but his prejudices often miſlead his judgment: in his temper he is benevolent, in his life charitable to an extreme; in his writings he is ſour, contemptuous, and malignant: with theſe faults, if he had not great virtues, he would be inſufferable; with theſe virtues, if he had not great faults, he would be highly reſpectable: nay, with all his faults he muſt be reſpected." **G.**

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ART. VIII. *A Diſſertation on the Antiquity of the Earth*, read at the Royal Society, 12th of May, 1785. By the Rev. James Douglas, F. A. S. 4to. 10s. 6d. Boards. Nicol. 1785.

THOUGH we firmly believe that this work was preſented to the Public with a ſincere intention of rendering ſcience a material ſervice, yet we are ſorry to find that ſo ſtrenuous and warm an advocate for the promotion and advancement of natural knowledge, as the Author ſeems to be, ſhould have deviated from the true method of philoſophizing, by admitting hypothetical arguments to influence his reaſoning, inſtead of guiding his inquiries by the unerring principles of demonſtrative evidence; and we are the more ſurpriſed that he ſhould fall into this error, ſince he acknowledges the ſuperior excellence of the latter in philoſophical ſubjects. 'Having the paſſions and prejudices of mankind to combat, which mathematical certainty can alone effectually ſuppreſs, we muſt content ourſelves only with making converts of thoſe who have minds ſufficiently expanſive to liſten to hypothetical arguments, without the ſhackles of Euclid, and the vanity of diſplaying their own learning and pedantry. Much may be ſaid in favour of that reſtriction which the human mind would be ſubject to, when, on the flight of imagination, it may be induced to ſoar to the dangerous regions of conjecture; but were we only to admit mathematical argument into our inquiries, men would be reſtrained from their ardour of conception, and, becoming languid in their purſuits after knowledge, they would ſink into a laſting ſupineneſs.' *Pref.* p. v.

We ſhould inſult the judgment of our readers were we to offer any remarks upon a paſſage ſo inconſiſtent with the preſent true mode of purſuing philoſophical inquiries.

Mr.

Mr. Douglas's deſign, in this performance, is to prove the antiquity of the earth, from the conſideration that petrifactions of animal ſubſtances require a vaſt ſpace of time to become totally changed in their texture, and acquire the ſtony form in which they are found. Naturaliſts univerſally allow petrifactions to be undeniable proofs of the great age of the world, but we do not recollect that any one, like our Author, has pretended, from the various phenomena attendant upon theſe ſubſtances, to determine what length of time would be neceſſary to produce the changes they have undergone: and indeed with very great reaſon; for the ſituations in which animal relics lie buried are ſo various, and the circumſtances of their lodgments ſo widely different, that no arguments of any weight can be brought to ſhew how long this or that muſt have lain before it could have been in part or wholly petrified.

The principal fact on which Mr. Douglas builds his arguments, is the diſcovery of ſome petrified bones at Chatham, 12 feet below the ſurface of the earth. They were depoſited in a ſtratum of drift or river ſand, blended with a kind of clay, of a yellowiſh grey tinge: the incumbent ſoil was a compact loam with horizontal veins of a blackiſh hue running through it. This vein of loam extends itſelf, in an horizontal direction, through the town of Chatham, about 20 feet above the level of the river Medway at highwater-mark. By the poſition of the bones, and the fragments that were preſerved, they appear to have belonged to one entire animal. Our Author procured part of the under jaw with two teeth (of which he has given an excellent aquatinta plate), and ſome other fragments; they were wholly deprived of their animal ſalt, and ſome of them, eſpecially the jaw, are 'permeated with a lapideſcent matter.' Mr. D. enters into a long diſquiſition about animal ſalt, and the component parts of animal ſubſtances, but in a manner which ſhews that he is not yet an adept in chemical knowledge.

Returning to the bones, he concludes, and indeed with every appearance of probability, that they are the remains of an Hippopotamus, at preſent an inhabitant of the Nile, and other large rivers of Africa; and ſince they were diſcovered petrified and entire in 'a ſoil which had been formed by the *reſidue* [ſubſiding] of the water,' it ſhould ſeem that they muſt have been depoſited by this cauſe, that the animal muſt have lived near the place where it was found, and, conſequently, could not have been brought from any of the African rivers by Noah's flood. From a conſideration of theſe circumſtances, Mr. D. makes the following concluſions:

'That this iſland has been under a warmer influence of climature than at this preſent æra.

'That the animal called the Hippopotamus, the inhabitant of the continent of Africa, muſt have been depoſited on the ſtrand

ſtrand of the river Medway by waters, ſeparable from that epoch recorded in holy writ which ſubmerged the world in forty days.

'That the earth was once endued with a power of tranſmuting bodies into ſtoney or hard ſubſtances, which it ſeems no longer to poſſeſs *; or that by the undoubted teſtimony of theſe petrified animal bones, they muſt have been interred much anterior to any written record, from ſome extraordinary convulſion of the globe.'

It is ſtrange that the earth ſhould have been once endued with a power which it ſeems no longer to poſſeſs. We have ever been of opinion that one of the principal properties of nature is to be *ſibi ſemper ſimilis*, and it muſt be acknowledged that her operations are carried on in the ſame manner *now* as *formerly*: as an inſtance of which we mention the petrifaction of a human body found in 1722, which lay buried about 50 years in the copper-mines at Falhan in Dalecarlia, vid. *Linn. Syſt. Natur. tom.* iii. This is a recent fact, which we look upon as furniſhing an undeniable proof that petrifactions have been produced within theſe laſt 100 years.

Our Author next conſiders the petrifactions of elephants' bones and tuſks, ſo frequently found in various parts of Europe. The Emperor of Germany's muſeum at Vienna furniſhed him with numerous ſpecimens of this petrifaction, ſome of which are throughout calcareous, while others are entirely changed to the hardeſt black agate. Theſe are conſidered as having required an immenſe length of time to become ſo 'fully ſaturated with lapideſcent matter.'

Mr. Douglas has had various opportunities of finding human bones in many different ſoils, with the date of their depoſit interred near them; and one in particular with a variety of relics found in the grave, he 'takes the liberty to introduce as perfectly eſſential to the matter of the preſent diſquiſition. The bones, which were entire during the ſpace of 1300 years, were not calcined, but contained almoſt as much gluten or animal phlogiſton as a recent bone; and an ivory armilla, not a quarter of an inch in thickneſs, found in the ſame grave, alſo preſerved its animal

* 'I beg to obſerve, when I ſpeak of petrifaction, that I mean a quality which the earth appears to have had of indurating bodies, by the operation of certain acids, and not of that quality with which certain ſoils are endued, of depoſiting an earthy or ferrugineous incruſtation on the bodies encloſed in it; or of that power which produces ſparry or ſtalactical matter, and which is ſometimes found to encloſe heterogeneous bodies; in ſhort, of that power which is known to come within the ſcope of human definition, and to which a phyſical cauſe can be aſcribed.'—Indeed, Mr. Douglas, this is a very curious chemical note!

ſalt,

ſalt. From theſe premiſes our Author thinks he is juſtly permitted to draw this inference:

'That, as the earth, within the given time of *thirteen hundred* years, has not had the power of petrifying ſo ſmall a ſubſtance as an ivory armilla, or of extracting the animal property from it; the time which would have elapſed to have rendered the tuſk of an elephant calcareous, and to have converted it into the ſolid ſubſtance of an agate, could not bear any relative proportion to the tranſition of time, which human obſervation has thus prefixed: hence, by a progreſſive ſucceſſion of truths, I may naturally conclude, that ſome unknown lapſe of time muſt have tranſpired for the production of this phenomenon, or that the earth muſt have been endued with a power of operating this effect, which ſome revolution in nature has now entirely deſtroyed.'

This is the principal outline of the performance before us, though it was not without difficulty that we were able to give our readers any idea of the Author's plan, for he writes in a very deſultory and immethodical manner, and his ſtyle in many inſtances betrays haſte and inaccuracy. We hope, however, that in time his judgment will controul his ideas, and in ſome meaſure 'reſtrain the flight of his imagination,' ſince he ſeems, from the ſpecimen before us, to be poſſeſſed of ingenuity and abilities that may be highly uſeful in the cauſe of ſcience, eſpecially when joined with the ardent deſire which he appears to have for uſeful diſcoveries.

In the Appendix Mr. D. offers ſome obſervations on the bones found in the rock at Gibraltar, and others of a ſimilar kind. Buffon's ſyſtem, and Whitehurſt's theory of the earth, are examined, and remarks are made upon them.

The plates in aquatinta accompanying this work, which we find to be the Author's own performance, are neatly executed, and are good repreſentations of the originals, particularly thoſe of the coins, which we cannot help commending as engravings, although they are totally foreign to the main ſubject of his book. R— m.

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ART IX. *A Treatiſe on Ancient Armour and Weapons*, illuſtrated by Plates taken from the original Armour in the Tower of London, and other Arſenals, Muſeums, and Cabinets. By Francis Groſe, Eſq. F. S. A. 4to. 2l 2s. Hooper. 1786.

IN our Review for July 1785 we gave our readers an account of the firſt number of this ingenious work, wherein we explained, as far as the preface could enable us, the intention and nature of the performance. The whole being now completed, we find it divided into two parts, one deſcribing defenſive, and the other offenſive arms. Although Mr. Groſe confines himſelf chiefly

chiefly to the armour worn in England, from the conqueſt to the time of its diſuſe, yet he frequently entertains his readers with deſcriptions and engravings of foreign ancient armour; eſpecially when the conſideration of the latter elucidates or explains any particulars relative to the former. The ſources whence Capt. Groſe has drawn his information and examples, are the armour and weapons themſelves; he has never mentioned any part of armour without having the original before him both for the verbal deſcription and drawing, ſo that we meet with nothing of which ſpecimens may not be ſeen either in public arſenals, private cabinets, ſepulchral monuments, or ancient ſeals; and in order to ſatisfy the curioſity of his readers, he has, in the explanation of the plates, always been attentive to refer to the originals whence the drawings were made; and in the hiſtorical and deſcriptive part he is no leſs careful to quote authorities for what he advances.

Such is his general plan, and the accuracy with which he has executed it, is ſimilar to that obſervable in his former publications.

The ſeveral parts of armour are deſcribed ſeparately, their uſes are pointed out, and the different forms in which they were made at different periods of time, are fully explained. The learned Reader will find many curious remarks relative to the etymology of the names of the moſt material pieces of armour; by which it evidently appears that our Author has not compiled the preſent performance in haſte, but that it has been the reſult of extenſive reading, cloſe ſtudy, and a mature conſideration of the ſubject. The hiſtorian will alſo receive much inſtruction as well as entertainment from an attentive peruſal of this treatiſe, eſpecially in ſuch matters as relate to ſieges and martial operations. In a word, readers of every deſcription will have the ſatisfaction of meeting with ſomething agreeable or uſeful.

The engravings which, being 49 quarto plates, beſide an elegant frontiſpiece, conſtitute a conſiderable part of the book, are executed in that maſterly ſtyle which has always characterized the Captain's former works: they are exact repreſentations of the originals, which is a moſt material recommendation of them; they would however have been much more agreeable to the eye had they been drawn without the ſtands or props on which the armour is ſupported. Though the ſtands are neceſſary in the arſenal, yet they fill the picture with an appearance of ſomething foreign and extraneous: but it ſeems a peculiarity of this accurate artiſt, to let nothing eſcape which preſents itſelf to his eye, when he is viewing a ſcene, or drawing an object.



ART.

## ART. X.

# FOREIGN LITERATURE.

## ITALY.

Art. 1. *NUOVO Methodo*, &c. *i. e.* A new Method of treating certain Diſorders under chirurgical Inſpection. By M. FULGONI. 4to. With Plates. Rome. 1786.—The *firſt* of four diſſertations contained in this work treats of *aneuriſms* in the lower extremities, the *ſecond* of the fracture of the collar bone, the *third* of the fracture of the knee-pan, and the *fourth* of the uſe of camphor in the cure of external wounds. To theſe diſſertations our Author has prefixed ſome critical reflections on chirurgical practice, and hiſtorical accounts of ſeveral eminent practitioners, whoſe merit is celebrated with due applauſe. To theſe are added two remarkable obſervations; one, of an imperfect conformation, in which the parts of generation, and the urinary bladder, were wanting; the other, of two heterogeneous ſubſtances which found a paſſage into the bladder, one by the mouth, the other by the urethra.

2. *Delle Oſſa*, &c. *i. e.* A Memoir concerning the Bones of Elephants, and other natural Curioſities, found in the Mountains of Verona. By the Abbé FORTIS. 8vo. Vicenza. 1786.—We have received information concerning this work, but we have not yet ſeen it: when it comes to hand, we ſhall communicate the ingenious Abbé's explication of the matter. As the bones in queſtion announce elephants, in great number, of all ages and all ſizes, theſe fragments cannot be ſuppoſed to belong to the elephants which are ſaid to have been brought into Italy by Hannibal and Pyrrhus.

3. *Lettere fiſiologiche*, &c. *i. e.* Phyſiological Letters of Dr. ROSA, Preſident of the College of Phyſicians at Modena. 4to. Macerata. 1786. Theſe letters do honour to the penetration and induſtry of their learned Author, whoſe diſcoveries and obſervations have contributed not a little to explain ſeveral curious and important phenomena both in the animal and vegetable world.

4. *Memorie*, &c. *i. e.* Hiſtorical Memoirs of the Eaſt-Indies. By Father EUSTACHIO DELFINI, a Piedmonteſe Carmelite. 8vo. Turin. 1786.—This Monk, who accompanied the French admiral *Suffrein* in his expedition to the Indies, gives us a topographical deſcription of that extenſive region, together with an hiſtorical account of the different forms and tenets of religion that diſtinguiſh its inhabitants. Like all new comers on the hiſtorical ſcene, this Author corrects, on ſeveral occaſions, the relations of preceding travellers and obſervers. Among other things, we find in this publication a life of the famous *Hyder Ali*, together with a relation of many ſingular events.

5. *De*

5. *De Igne*, &c. *i. e.* Philoſophical Theſes concerning the Nature of Fire. Dedicated to Pius VI. By Count CHARLES RESTA, Patrician of Milan. 4to. Rome. 1786.——Thoſe who are acquainted with the recent and multiplied experiments of the Doctors Prieſtley, Black, Crawford, Bergman, Scheele, Abbé Fontana, and other learned men, relative to the ſubject here announced, will meet with nothing very new in this performance. They will, however, find in it the heads of an elementary treatiſe upon Fire, judiciouſly propoſed, and elegantly arranged; and in this point of view the work before us has a conſiderable degree of merit. In the noble Author's plan for the compoſition of ſuch a *treatiſe*, the theſes, or propoſitions, announced in the title of his work, are diſtributed into three claſſes; the 1ſt, containing all that relates to the *nature* of the igneous fluid in general;—the 2d, all the *intimate combinations* of this fluid, conſidered as *principle*;—the 3d, the freer union of *fire* with other bodies in a ſtate of mixture only, and aggregation. Under the three heads of this diviſion, the Author, without profeſſing to give a complete treatiſe on the ſubject, furniſhes, nevertheleſs, by reaſonings upon the facts which experiments have diſcovered, very good materials for ſuch a treatiſe.

Under the *firſt* he proves that fire is not a modification of other bodies, but a ſubſtance *ſui generis*, ſimple, peculiar, elementary, and not compoſed, as ſome learned men have imagined, of phlogiſton intimately combined with pure air. He conſiders it, moreover, as the univerſal diſſolvent, the cauſe of all fluidity, and the principle, by whoſe influence, air, water, and all other *menſtrua* exerciſe activity. He looks upon it as the principle of ſeveral cryſtallizations, as the cauſe of the aeriform appearances, of which many ſubſtances are ſuſceptible, and the great agent from whoſe preſence and quantity, the preſervation or deſtruction, both of vegetative and ſenſitive life, are equally derived.

After having unfolded the nature and general properties of the igneous fluid, M. RESTA, in the *ſecond Part* of his work, conſiders this fluid in its combinations; and here he goes over the ſame ground that has been trod, before him, by the *Prieſtleys*, the *Fontanas*, the *Sennebiers*, and other eminent men. In the third Part, already announced, he follows and illuſtrates the theory of Dr. Crawford.

6. *Memorie Iſtoriche*, &c. *i. e.* Hiſtorical Memoirs concerning *Cerignola*. By M. THEODORE KIRIATTI, M. D.—The Author ſhews that Cerignola is the ancient Gerionum (which is no new diſcovery), and that it was founded by the *Auſonians*; which may have been the caſe. His account of the flouriſhing ſtate of Apulia, when Hannibal made himſelf maſter of that country, and of its preſent ſtate with reſpect to population, agriculture, commerce, induſtry, towns, and public edifices, is more intereſt-

ing. His work is terminated by an eſſay on the natural hiſtory of this fertile region, and an enumeration of the experiments he made to aſcertain the non-exiſtence of the venom attributed to the *Tarantula*.

7. *L'Iliade*, &c. *i. e.* Italian tranſlations of the Iliad of Homer. Vol. I. By the Abbé CESAROTTI. Padua. 1785.—We announce this tranſlation, on account of the treaſure of hiſtorical and critical erudition with which it is accompanied. We have, here, indeed two tranſlations; the one literal, in proſe, which is to ſupply the place of the original text;—the other poetical, and made with a certain freedom, into which our Author has endeavoured to transfuſe the ſpirit of the Grecian bard. The proſe tranſlation is accompanied with a multitude of mythological, hiſtorical, critical, philoſophical, and grammatical obſervations, which conſtitute the moſt inſtructive part of the work. Many volumes, ancient and modern, have been laid under contribution to furniſh theſe obſervations, to which the Abbé has added a certain number of his own. Theſe are followed by whole diſſertations, borrowed from eminent critics and philologiſts, and deſigned to illuſtrate a variety of ſubjects relative to the Iliad. But this is not all: for, to render this work uſeful to the lovers of Grecian literature, M. CESAROTTI has placed at the end of the volume, the moſt conſiderable *various readings* of the Greek ſcholiaſts, which are in the library of St. Mark at Venice, and are to be publiſhed in the edition of Homer, promiſed by the learned M. *Villoiſon*.—There is alſo prefixed to the tranſlation before us a *Preliminary Diſcourſe*, containing an ample account of Homer's life and writings. *M—e.*

*** Since writing the above, we have, by accident, met with the 3d edition of Abbé Ceſarotti's Italian tranſlation of the works of Oſſian; and we purpoſe to give an account of it in our Appendix—which will be publiſhed next month, as uſual.

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# MONTHLY CATALOGUE,

## For DECEMBER, 1786.

### POLITICAL.

Art. 11. *The Treaty of Navigation and Commerce between his Britannic Majeſty and the moſt Chriſtian King.* Signed at Verſailles Sept. 26, 1786. In French and Engliſh. 4to. 2s. 6d. Harriſon.

WITH reſpect to this article, the Public are all critics, to a man; it would be, therefore, impertinence in us, were we to pretend to give a review of it.

Art. 12. *The two Treaties between Great Britain and France.* The former in the Reign of Queen Anne, the latter in the Year 1786, compared, Article by Article, in oppoſite Columns. Together with

with the Subſtance of 46 Petitions preſented againſt the former Treaty, by the Manufacturing Intereſts of Great Britain, faithfully tranſcribed from the Journals of the Houſe of Commons. Likewiſe a Narrative of the Reception of the ſame Treaty by the Public, and the final Deciſion upon it in Parliament. 4to. 1s. Debrett. 1786.

The deſign of this publication is to ſhew the great ſimilarity of Mr. Eden's commercial Treaty, with that of Utrecht, in the year 1713, which was ſtrongly objected againſt by manufacturers and tradeſmen of various deſcriptions, under the apprehenſion of the bad effects it would have on the commerce and manufactures of the kingdom; and which was rejected by the Houſe of Commons.

Mr. Eden's Treaty is, in ſubſtance, and generally in words, an exact copy of the former; the compiler of the preſent comparative performance, ſeems to think that there is the ſame cauſe for apprehenſion now that there was in 1713; and he wiſhes to have this plain queſtion determined, *viz.* 'Why the very Treaty, which, in 1713, was, with one voice, ſcouted through the kingdom, ſhould, in 1786, be quietly acquieſced in, as a matter of national honour and advantage?' R—m

Art. 13. *A Collection of Letters on intereſting Subjects*; in which the Benefits of Whiggiſm are pointed out, and the Origin of the Revolution is inveſtigated; that the Public may know to whom they are indebted for this wonderful Change in our political Hemiſphere. 12mo. 1s. Bramwell. 1786.

King William, a Papiſt! the Pope, chief inſtrument in bringing about the Revolution! The Whigs, a pack of knaves! &c. &c. is the language of this anonymous politician.

'What generous mind can refuſe to rejoice when truth emergeth from obſcurity, when facts which have been ſo long the theme for eulogiums are ſtripped of their varniſh, and appear in the odious and deteſtable light which they deſerve?' Preface, p. iv.

What pity that we are left ignorant of the ſagacious diſcoverer, who thus brings forth the *truth*, and proclaims theſe *great tidings!*—eſpecially as we are not favoured with references to any other authority for the paradoxical facts here advanced, beſide the mere *ipſe dixit* of Mr. Anybody, or Mr. Nobody. D.

## GEOGRAPHY, *&c.*

Art. 14. *Cary's Actual Survey of the Country Fifteen Miles round London.* On a Scale of one Inch to a Mile. Wherein the Roads, Rivers, Woods, and Commons, as well as every Market Town, Village, &c. are diſtinguiſhed; and every Seat ſhewn, with the Name of the Poſſeſſor. Preceded by a General Map of the Whole. To which is added, an Index of all the Names contained in the Plates. 8vo. 8s. ſewed.

Art. 15. *Cary's Actual Survey of the Country Ten Miles round Hampton Court and Richmond.* On a Scale of One Inch to a Mile. Wherein, &c. 8vo. 3s. ſewed. Cary, No. 188, Strand.

In our Review for April laſt, we made mention of Mr. Cary's *Actual Survey of Middleſex*, and recommended it to the notice of the Public, as being "peculiarly convenient for occaſional conſultation—both as a county-map, and as a road-directory." And the ſame

degree of commendation may be honeſtly due to the preſent publications, only that they do not come under the denomination of *County-maps*.

Mr. Cary's Surveys are, without queſtion, the moſt accurate and elegant of any that have appeared ſince the days of *Roque*. His maps too, are poſſeſſed of this very peculiar excellence, that when cut, and paſted on canvas for the pocket, the names of the ſeveral places are no way mangled or injured by it, but remain whole and entire:—this gives clearneſs and diſtinctneſs to the various parts of the diſſected map, and adds conſiderably to the beauty of the whole.

HISTORICAL. *A. B.*

Art. 16. *The Hiſtory of the War with America, France, Spain, and Holland*, commencing in 1775, and ending in 1783. By John Andrews, LL.D. 8vo. 4 Vols. 1l. 10s. Boards. Fielding. 1786.

This Hiſtory is chiefly compiled from the public prints, and the proceedings of the Houſe of Commons; and is frequently interſperſed with pertinent political remarks. The facts *in general* are well recorded; in ſome circumſtances we think the Author has not been fully informed, but theſe are few. Impartiality, the greateſt recommendation of an hiſtorian, eſpecially the hiſtorian of his own times, ſeems to have been much attended to by the Author; and though, on the whole, he has placed things in a proper light, and apparently attributed them to their true cauſes, yet we are doubtful that TIME has not yet ſufficiently detected the hidden motives that actuated the contending powers in their various operations. *R— —m*

AGRICULTURE, *&c.*

Art. 17. *National Improvements upon Agriculture*, in Twenty-ſeven Eſſays, by David Young, Perth. 8vo. 5s. Boards. Edinburgh, Bell. 1785.

We have ſeldom read a performance that aſſumes a more uninviting appearance than that now before us. The language is vulgar, and abounding in Scotticiſms, ſo as to be ſcarcely intelligible; the ſtyle prolix, and embarraſſed, full of digreſſions that have no connection with the ſubject, and repetitions without end. The Author is evidently unacquainted with the firſt principles of philoſophy; yet the greateſt part of his performance conſiſts of attempts to account for the various phenomena of nature; and he talks in a deciſive manner on the moſt intricate ſubjects. The formation of the univerſe, the internal ſtructure of the earth, the changes that have been produced on the earth's ſurface, &c. &c. are favourite ſubjects with our Author, to which he recurs in almoſt every page of his book. He is likewiſe particularly fond of treating of the ſingular ſubſtance called *peat*, or, as he ſtyles it, *moſs*; though it is very evident to an intelligent reader that he knows little of its nature and qualities, and that he recommends it, for many uſes for which it is altogether unfit. In ſhort, there is ſuch a jumble of nonſenſe to be met with in almoſt every page of the book, as will probably diſguſt moſt readers, and prompt them to throw it aſide before they have peruſed one half of it.

Notwithſtanding this ſevere cenſure, which juſtice obliges us to paſs upon this work, the ſame juſtice obliges us to own, that an intelligent

gent reader, who can paſs over its imperfections, will diſcover that ſome fundamental principles of agriculture are laid down in this work, and frequently inculcated with great and laudable zeal; ſuch as, that ground ſhould be, at any rate, made perfectly clean, and before any other improvement ſhould be attempted—that it is of importance to lay ground into graſs when perfectly clean, and fully enriched by manures—that it is a great improvement to keep a large proportion of ground, thus cleaned and enriched, in graſs: with ſeveral other general axioms of the ſame kind, that are not ſufficiently adverted to: but, while we approve of theſe fundamental principles, as advanced by our Author, we muſt condemn, as abſurd and impracticable, the greateſt part of the meaſures he recommends, for bringing the ground into that good order which he wiſhes. The object that he is deſirous to attain is good, but the means he preſcribes for that purpoſe are altogether inadequate, and many of them are ſo exceedingly whimſical, as to excite compaſſion for the man who could ſeriouſly recommend them.

An—n

## EDUCATION.

Art. 18. *A Chart*, ſhewing the Gender of every Noun in the French Language, included in two Tables of Maſculine and Feminine Terminations. A Sheet in large Folio. 1s. Law.

French grammarians have found great difficulty in making rules for the genders of nouns. This chart, ſhewing the rules in one view, may have ſome advantages over a grammar, where the rules are not placed together.

A. B.

## ECCLESIASTICAL LAW.

Art. 19. *The Arguments of Counſel* in the Eccleſiaſtical Court, in the Cauſe of Inglefield. With the Speech of Dr. Calvert, July 22, 1786, at giving Judgment. 8vo. 2s. Murray.

Theſe ſpeeches were printed from Mr. Gurney's ſhort-hand notes; and are curious ſpecimens of the abilities of the learned Civilians. As to the *nature* of this extraordinary cauſe, delicacy commands our ſilence.

## POETRY.

Art. 20. *Poems*, and other Pieces, by Henry Headley. 8vo. 1s. 6d. Robſon. 1786.

Mr. Headley, we underſtand, was a Member of Trinity College, Oxford, and now reſides at Norwich. The greater part of theſe poems, or, as he himſelf quaintly ſays, 'the majority,' have been before made public. They are dedicated to Doctor Parr, as a mark of the gratitude and reſpect, which an ingenuous ſcholar thought due to his able and faithful maſter. The application of the paſſage from *Laurent. Valla*, does credit to the judgment of Mr. Headley, and expreſſes, very juſtly and fully, the merits of Dr. Parr. In the Poems themſelves there is much taſte, and ſome poetry; many nervous expreſſions, ſome harmonious verſes, a few ſentiments that have traces of originality, and a general felicity in the choice of ſubjects. The character of Lothario is well drawn; and we were much pleaſed with the Invocation to Melancholy, which ſeems to mark, not merely the powers of the writer, but the peculiarities of his character.—A young man, educated under Dr. Parr, cannot but reflect, with pity and reverence,

verence, upon the neglected genius and virtues of Peter Elkington, to whoſe memory Mr. H. has paid a handſome tribute of reſpect in an ingenious proſe epitaph. We think, with Mr. H. that many of theſe pieces were originally 'publiſhed too haſtily;' and we allow that his attempts 'to render them ſomewhat leſs exceptionable' have not been totally unſucceſsful. Many of the lines are, however, languid and inharmonious: the diction is ſometimes incorrect, and ſometimes even coarſe; and there is a general deficiency in that art of *finiſhing*, which every young writer ſhould endeavour to attain, before he preſumes to encounter the diſcerning eye of the Public. We think favourably of Mr. Headley's abilities; we are willing to encourage his exertions; and we adviſe him not to ſlight thoſe powerful and judicious objections, which his Maſter is well known to employ againſt precipitate publication. P—rr.

Art. 21. *Folly triumphant over Wiſdom.* A Poem. 4to. 1s. Robinſons, &c.

This piece is too dull to be called ſatire, and too proſaic to deſerve the name of a poem; it is nothing better than feeble ſenſe in rhime. E.

Art. 22. *An Ode on the Immortality of the Soul:* occaſioned by the Opinions of Dr. Prieſtley. And Life, an Elegy. By the Rev. John Walter, M. A. Maſter of Ruthin School, and late Fellow of Jeſus College, Oxford. To which is added, An Ode to Humanity, founded on the Story of Scipio: by the Rev. John Walter, Senior, Rector of Landough, Glamorganſhire. 12mo. 1s. 6d. Johnſon. 1786.

In the firſt of theſe pieces, the Author has unqueſtionably ſtarted, and is combating, a bugbear; for every one who is acquainted with Dr. Prieſtley's writings, muſt know, that he is a believer in the doctrine of Immortality, on the authority of Divine Revelation. Theſe Poems are of that middle character, which neither engages admiration, nor provokes cenſure. The ſentiments expreſſed in them are, in general, ſuch as will give pleaſure to the pious reader; and the numbers are not inharmonious. E.

## NOVEL.

Art. 23. *The Rambles of Fancy*; or moral and intereſting Tales. Containing, The Laplander. The ambitious Mother. Letters from Lindamira to Olivia. Miranda to Elvira. Felicia to Cecilia. The American Indian. The Fatal Reſolution. The Creole. By the Author of the Adventures of the Six Princeſſes of Babylon *. 12mo. 2 Vols. 5s. ſewed. Buckland. 1786.

Take care, fair lady! you are by no means ſafely mounted—Fancy is a runaway tit, and ſtands in particular need of the curb. Without a figure, we would recommend it to Miſs Peacock, in her future writings, to keep a little more within the line of nature and probability. Her ſtories are too romantic to affect us, and her language much too pompous to pleaſe. We muſt farther obſerve to her, that in the preſent times, a tale about Genii and enchanted palaces has but little chance of being read.

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* Miſs Lucy Peacock.

We

We mean not, however, to diſcourage the lady: ſhe is not without abilities—but the fineſt ſoil requires the hand of culture to make it valuable. Let Miſs Peacock attend to this; and we doubt not but that her imagination, when meliorated by time, will bring forth good and wholeſome fruit. *A. B.*

## DRAMATIC.

Art. 24. *He would be a Soldier*; a Comedy. In Five Acts. As performed at the Theatre Royal, Covent Garden. Written by Frederic Pilon. 8vo. 1s. 6d. Robinſons. 1786.

In his Preface, Mr. Pilon informs the reader, that 'the very great ſucceſs which has attended the performance of this comedy, induces the Author to ſtate a circumſtance which, *on the firſt bluſh of the buſineſs*, muſt appear rather ſingular. *He would be a Soldier* was preſented to Mr. Colman in the courſe of laſt ſummer, and returned—becauſe *that gentleman did not like a line of it.*'—If our Author means by this anecdote, to impeach Mr. Colman's judgment, he, at the ſame time, does him complete juſtice, by printing the play.

## MEDICAL.

Art. 25. *Two introductory Lectures*, delivered by Dr. W. Hunter, to his laſt Courſe of anatomical Lectures at his Theatre in Windmill-ſtreet. To which are added, ſome Papers relative to Dr. Hunter's intended Plan for eſtabliſhing a Muſeum in London for the Improvement of Anatomy, Surgery, and Phyſic. Printed by Order of the Truſtees. 4to. 6s. Boards. Johnſon. 1784 *.

The two lectures here publiſhed contain the hiſtory and the eulogium of anatomy; alſo the proper method of purſuing anatomical ſtudies with advantage.

Though we do not perfectly agree with the late Dr. Hunter in all the opinions advanced by him, yet we think this performance, eſpecially the latter part of it, merits the peculiar attention of the anatomical ſtudent; the advice it delivers muſt, if duly attended to, be ſingularly uſeful.

We have in this publication a memorial from Dr. Hunter which was preſented to the King by Lord Bute, ſhewing the uſefulneſs of anatomy, and the neceſſity of its being cultivated. The Doctor propoſed to eſtabliſh an anatomical ſchool for teaching this ſcience more advantageouſly than it had hitherto been taught in this kingdom. Toward executing this plan, he ſolicited Lord Bute to obtain from the King a grant of a piece of ground for building a theatre, muſeum, and dwelling-houſe for the profeſſor; offering to expend ſix or ſeven thouſand pounds in the building, and in the endowment of a perpetual lectureſhip, over and above furniſhing the muſeum with his very valuable and curious collection of preparations and books. After repeated applications, he had the mortification to find that his propoſals were unacceptable. At length, wearied by long delay, he wrote to Mr. Grenville, begging pardon for having given ſo much trouble, and withdrawing his generous offer.

That Government ſhould diſcountenance a ſcheme, ſo well calculated to promote the advancement of a uſeful ſcience, ſeems unaccountable! *R— n.*

* This article has by ſome accident been overlooked: it ought to have appeared ſooner.

Art. 26. *An Eſſay on the Virtues and Properties of the Ginſeng-Tea.* By Count Belchilgen, M. D. and J. A. Cope. M. D. and P. R. B. With Obſervations on the pernicious Effects of Tea-drinking in general. 8vo. 1s. Mrs. Randal, Royal Exchange. 1786.

Not an eſſay on the virtues and properties of that fine aromatic and cordial Aſiatic plant known by the name of *ginſeng*; but a recommendation of we know not what farrago of herbs, roots, and flowers prepared by the Author.

The obſervations on tea-drinking are extracted from Dr. Lettſom; and a few caſes are added, of people who have been cured by the uſe of the Author's infuſion. R — m

Art. 27. *An exact Repreſentation* of the very uncandid and extraordinary Conduct of Dr. John Coakley Lettſom, as well previous to, as on, the Day of Election for Phyſician to the Finſbury Diſpenſary. By Thomas Skeete, M. D. 8vo. 6d. Fielding. 1786.

Art. 28. *A Vindication* of Dr. Lettſom's Conduct relative to the late Election at the Finſbury Diſpenſary, in a Letter from J. C. Lettſom, M. D. to S. Hinds, M. B. 8vo. 6d. Fielding. 1786.

The Public is not intereſted in private diſputes. There are few to whom this conteſt relates, and ſtill fewer to whom it will afford any entertainment.

Dr. Skete has publiſhed a reply to Dr. Lettſom's *letter*, in a half ſheet, of eight pages, 8vo. given *gratis*.

Art. 29. *An Eſſay on the medical Character*, with a View to define it. To which *is* ſubjoined, Medical Commentaries and Obſervations adapted to ſeveral Caſes of indiſpoſed Health. By Robert Bath. 8vo. 2s. 6d. Laidler.

An imitation of Dr. Gregory's "Duties and Office of a Phyſician." The commentaries and obſervations, which occupy three fourths of the work, are ſometimes judicious; but we cannot accede to all Mr. Bath's doctrines, nor do we admire his ſtyle, which is in general ſingular and affected. R — m

Art. 30. *A conciſe Relation of the Effects of an extraordinary Styptic*, &c. By Barth. Ruſpini. 8vo. 2s. 6d. Johnſon. 1786.

This performance, which is to be conſidered as a ſecond edition, contains farther confirmations of the efficacy of the ſtyptic mentioned in our Review for Auguſt laſt, page 156 Do.

Art. 31. *A ſhort Eſſay on the Nature and Symptoms of the Gout*; with a View to recommend a Medicine to the Attention of thoſe who are afflicted with the irregular and flying Gout. By James Rymer, Surgeon. 12mo. 4d. Evans. 1785.

Short, but containing juſt obſervations. Not knowing Mr. Rymer's ſpecific, we can ſay nothing of its good qualities. We therefore refer our readers to his own account of it. Do.

Art. 32. *Some uſeful Obſervations, from long Experience, on the Virtues and Efficacy of thoſe celebrated Medicines*, James's Powders, and Norris's Drops. By a Phyſician. 8vo. 6d. Bew. 1785.

The Author of theſe obſervations impartially examines the merits of two well-known antimonial preparations, one in a ſolid, the other in a liquid form. He juſtly obſerves, that in ſome caſes the powders

powders ſeem to be more efficacious than the drops; and, that in others, the liquid form is preferable to the ſolid. The good effects of each of theſe medicines are fully ſet forth in former publications.

Art. 33. *The preſent Practice of Surgery.* By Robert White, M.D. 8vo. 6s. Boards. Johnſon. 1786.

The art of ſurgery has of late years been greatly improved, and many uſeful practical rules have been added to thoſe delivered by former writers. Dr. White's intention in the preſent work is, to offer to the young practitioner 'a general ſyſtem, as compendious as its nature would admit of, formed from the general practice, in its preſent cultivated ſtate, and founded on poſitive facts.'

We acknowledge his good wiſhes, and the deſire he expreſſes for the improvement of the art; but we ſincerely regret that the rational and theoretical parts of ſurgery ſhould have been not only neglected by the Doctor, but even the ſtudy of them diſcouraged. He complains heavily, that, 'in this refined age, theory has too much the aſcendency.' The expreſſion is by no means a proof, that the Author of it, lives in an age and country which is in the leaſt refined. He reprobates the ſtate of learning too; 'Education,' he ſays, 'is wrought up beyond the limits of uſeful knowledge.' How many parts of uſeful knowledge are we not in want of? Does not the medical art, in all its branches, afford ſufficient proofs of our deficiency in uſeful knowledge? How many miſerably diſtreſſed objects daily implore in vain the aſſiſtance of our beſt practitioners? Uſeful knowledge has not yet arrived at its *limits*; nor is it in the power of man to define theſe limits, ſuppoſing them even to exiſt.

The work before us contains many good practical obſervations, and, though it is by no means a complete ſyſtem of ſurgery, it will, in ſeveral inſtances, afford inſtruction to the practitioner. It is conciſe, and in ſome places ſo brief, as to afford but little aſſiſtance to the ſtudent.

The language is frequently laboured, hard words are often unneceſſarily introduced, and what is worſe, miſapplied. 'Exorbitant fleſh *,' in fungous ulcers, for *exuberant*. 'Purity' of the wound, for *cleanneſs*. 'Lay' frequently occurs for *lie*. With many others of a like kind, which are unpardonable.

Art. 34. *An Inquiry into the Origin and Antiquity of the Lues Venerea*; with Obſervations on its Introduction into the Iſlands of the South Seas. To which is added, a ſhort View of the various Remedies recommended in that Diſeaſe, from its firſt Appearance in Europe to theſe Times. By William Turnbull, Surgeon in his Majeſty's Navy. 8vo 2s. 6d. Murray. 1786.

We ſuppoſe moſt of our medical readers are ſufficiently acquainted with the hiſtory of this dreadful calamity: they will, however, in the preſent performance, meet with a conciſe and faithful account of the means by which it has been propagated, and a detail of the various remedies which practitioners in different countries and ages have uſually recommended for its cure.

Art. 35. *Obſervations on the Uſe of crude Mercury or Quickſilver*, in Obſtructions of the Bowels, ariſing from Inflammations or

* This, however, we imagine, may be an error of the preſs.

other Cauſes. With Remarks on the Uſe of Caſtor Oil. By R. S. Nevinſon. 8vo. 1s. 6d. Newark printed, and ſold by Baldwin in London. 1786.

We ſcarcely expected to have ſeen this dangerous mode of practice, which has been ſo univerſally reprobated by all rational practitioners, recommended by a writer of the preſent day. The quotation of the following maxim is a ſufficient proof of the Author's literary abilities. 'Anceps remedium melior eſt quam nullam;' and his frequent uſe of egotiſm marks his ſelf-opinion. R— m

Art. 36. *A Lecture*, containing plain Deſcriptions of the Situation of the large Blood-veſſels of the Extremities; the Inſtrument called Tourniquet; and the Methods of making effectual Preſſure on the Arteries, in Caſes of dangerous Effuſions of Blood from Wounds, &c. By W. Blizard. 8vo. 1s. 6d. Dilly. 1786.

The laudable deſign of giving inſtruction to young men who are intended for the army or navy, of the means by which they may ſtop violent hemorrhages until the aſſiſtance of a ſurgeon can be procured, deſerves encouragement; and we are happy to find a gentleman, ſo well qualified, heartily engaged in the execution of it. R—m

Art. 37. *A Treatiſe on the Gout*; with the Recommendation of a new Medicine. By Onſlow Barret, M. D. 1s. 6d. Stockdale, &c. 1785.

An advertiſement for the Author's *ſpecific pills*. D.

Art. 38. *An Eſſay on natural Labours*. By Thomas Denman, M.D. 8vo. 2s. Johnſon. 1786.

A continuation of the Doctor's works on the obſtetrical art. The preſent performance is ſimilar to thoſe of which we have frequently given our opinion. D.

## MISCELLANEOUS.

Art. 39. *A candid Defence of the Appointment of Sheriffs Brokers*, as originally inſtituted by Sir Barnard Turner, Knt. and Thomas Skinner, Eſq. late Sheriffs. 8vo. 1s. Davis, &c.

From the repreſentations here given, we find that where goods were taken in execution, the officers who took them had the appointment of brokers to value them, who managed ſo well their mutual intereſt as to oppreſs both debtor and creditor; and that the connection between them was underſtood by finding particular brokers always ſtanding ſecurities for ſeveral ſheriffs officers under all changes that took place. In annual offices, thoſe who paſs through them ſeldom underſtand their buſineſs till their term is nearly expiring; ſo that the under-officers, who are ſtationary, taking continual advantage of the inexperience of their ſucceſſive principals, continual abuſes are practiſed, and under this office they are exerciſed on the unfortunate! Happily Mr. Sheriff Skinner underſtood the nature of this buſineſs too well to paſs it over, and therefore he and his colleague in office cut off the iniquitous connexion by appointing brokers themſelves: but their year having expired, and other ſheriffs ſucceeded, this publication ſeaſonably appeared, to prevent their tranſactions from returning into the old channel; as the officers contrive to render the buſineſs of the brokers under Mr. Skinner's regulation as unwelcome as poſſible, in order to reſtore their old friends, and renew their old habits of reciprocity.

N. Art.

Art. 40. *Letters* written in London by an American Spy, from the Year 1764 to the Year 1785. 12mo. 3s. Crowder, &c.

Theſe letters are ſuppoſed to have been written by an American Quaker, reſident in England, under the character of a ſpy. Notwithſtanding what is ſaid in the title, they are all dated within the year 1764, and refer to events of that year, or ſome preceding time. They contain ſlight and curſory remarks on political queſtions, public characters, Engliſh manners, philoſophy, and religion. On the latter topic, the writer diſcovers a ſtrong tincture of ſuperſtition: he is a believer in prophetic dreams or viſions, and is of opinion, that ſome of the heathen oracles were under the direction of evil dæmons. E.

Art. 41. *The new Guide through the Cities of London and Weſtminſter*, the Borough of Southwark, and Parts adjacent. By John Mazzinghy, M. L. 12mo. 3s. 6d. Boards. Dilly. 1785.

This work being given in French, as well as in Engliſh, the two languages fronting each other in oppoſite pages, muſt be uſeful to foreigners, as well as to natives of this country. A compilement from compilements; but being the *laſt*, it will, in courſe, have the preference, as containing the freſheſt information of what is new—in regard to public buildings, inſtitutions, and improvements of every kind; in all which this flouriſhing metropolis is continually making advances.

Art. 42. *Appeal from Scotland*, in which the Spiritual Court of the Church of England is demonſtrated to be oppoſite to the Britiſh Conſtitution, and a Part and Pillar of Popery. Addreſſed by Calvinius Minor, to the Right Hon. Lord George Gordon, Preſident of the Proteſtant Aſſociation. 8vo. 6d. Wilkins. 1786.

The ſpiritual courts (as they are termed) of the Engliſh church undoubtedly furniſh ſufficient matter of cenſure. Their claims and orders cannot be defended on rational and Chriſtian principles, and were they ſtrictly enforced and extended, would be productive, as they have been, and in ſome inſtances perhaps ſtill are, of heavy oppreſſion and evils almoſt inſupportable. Happy for the preſent times, they are generally under the direction of perſons who have too much wiſdom and candour to allow the full force and extent of their pernicious influence. In reſpect to the pamphlet before us, and the particular caſe to which it is directed, we do not conſider it as demanding our farther enquiry. This writer dates his letter, near Edinburgh, 4th June 1786. He appears to be a ſenſible man, and not unacquainted with his ſubject. After other remarks on the ſpiritual court of the Church of England, he proceeds to mention ſeveral pleas that may be urged againſt granting the writ *de excommunicato capiendo*, ſome of the more general kind, and ſome ſpecial, or relative to the particular caſe he has in view. H.

Art. 43. *Genuine Memoirs of Jane Elizabeth More*, late of Bermondſey, in Surry, written by herſelf: Containing her Sentimental Journey through Great Britain, ſpecifying the various Manufactures carried on at each Town. A comprehenſive Treatiſe on the Trade, Manufactures, Navigation, Laws, and Police of this Kingdom, and the Neceſſity of a Country Hoſpital. 12mo. 3 Vols. 9s. ſewed. Bew, &c.

A ſilly tale of trifling adventures, related in a moſt vulgar ſtyle. The language, both in proſe and rhime, is beneath criticiſm; and the journey through Great Britain is neither ſentimental nor inſtructive. We are ſorry for the unfortunate *woman*, while, in juſtice to the Public, and to our reputation, we muſt, of neceſſity, condemn the ſtill more unfortunate *writer*. R—m

Art. 44. *Particulars of the remarkable Trials, Convictions, &c. of John Shepherd*; with his Hiſtory, from his Birth. 8vo. 1s. Bladon.

Tediouſly written; but, we believe, faithfully detailed. Shepherd was executed for a highway robbery on the 22d of November 1786. He was a remarkable offender; and had, through miſtaken lenity, been too long permitted to prey on the Public.

Art. 45. *The Cacique of Ontario*; an Indian Tale. 4to. 1s. 6d. Fielding. 1786.

This tale appeared in the year 1776 in the third edition of a volume of poems * by Mr. Richardſon, profeſſor of humanity at Glaſgow, under the title of '*The Indians, a Tale* †. The new title ſeems to be fabricated by a perſon wholly unacquainted with the Indians of the northern parts of America, whoſe chiefs are called *Sachems* and not *Caciques*; and though there be a *lake*, yet we believe there is no *tribe*, of the name of *Ontario*. What right the preſent Editor had to make free with Mr. Richardſon's performance, is beſt known to himſelf.—N. B. His prefixed advertiſement, by which he would, as we apprehend, appear as the original Author, could not, poſſibly, have come from the elegant pen of Profeſſor Richardſon. What he means by '*fractical* proſe,' we cannot diſcover, unleſs it be a miſ-print, for *poetical* proſe.

Art. 46. *An hiſtorical Narrative of the Diſcovery of New Holland and New South Wales*, containing an Account of the Inhabitants, Soil, Animals, and other Productions of thoſe Countries, and including a particular Deſcription of Botany Bay, &c. 4to. 1s. 6d. Fielding. 1786.

The preſent narrative contains an account of New Holland, chiefly taken from Don Pedro Fernandez de Quiros, who firſt diſcovered this iſland in 1609, and from Capt. Taſman, who ſailed from Batavia in 1642. The deſcription of its ſoil, produce, inhabitants, &c. is, in great meaſure, extracted from Dampier's and Cook's voyages. Fronting the title-page, we have a neatly engraved chart of Botany Bay, with a general chart of New Holland, and the adjacent countries and iſlands. We ſhall tranſcribe the two concluding paragraphs for the ſake of the obſervations contained in them.

'Should a war break out with Spain, cruizers from Botany Bay might much interrupt, if not deſtroy, their lucrative commerce from the Philippine Iſlands to Aquapulco; beſides alarming and diſtreſſing their ſettlements on the weſt coaſt of South America.

'In the foregoing accounts, the country about the bay is repreſented as producing timber and ſtone for building, as alſo wood for

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* Of the firſt edition of theſe poems, ſee our account in Rev. vol. li. p. 94.

† We alſo find this tale in the fourth edition of Mr. R.'s poems.

firing;

ſtring; its ſoil as fit for the production of any kind of vegetable food; and the ſeas to abound with the moſt delicate fiſh. Should any object to the paucity of quadrupeds, it muſt be remarked, that a friendly intercourſe with the tropical iſlands will not only procure a ſupply of hogs for food, but alſo for ſtock; and as moſt of our navigators have aſſerted that the iſlands lying eaſtward of Borneo, are well ſtocked with cattle of the buffalo kind, a breed of thoſe, who are endemial to the climate, may be introduced, and in a few years, with the aſſiſtance of the hogs, there may be a ſufficient ſupply of animal food, not only for the uſe of the ſettlers, but alſo of thoſe who may be induced to viſit them.' *R . . . m.*

## POLICE.

Art. 47. *A ſerious Admonition to the Public*, on the intended Thief-Colony at Botany Bay. 8vo. 1s. 6d. Sewel. 1786.

The Author objects to the plan of ſending convicts to New Holland, on ſeveral accounts. He thinks it unadviſable for us to eſtabliſh new colonies, eſpecially at ſo great a diſtance from home, while 'the country is ſtill ſmarting *for* a war with her old colonies, whom ſhe found herſelf unable to keep in dependance.' His next argument is founded on the idea that the ſcheme would be an infringement on the charter of the Eaſt India Company, granting to them an *excluſive trade* and *navigation* from the Cape of Good Hope to the Streights of Magellan, within which boundaries New Holland is ſituated. The great expence neceſſary to keep the convicts in ſubjection, after their landing, as well as that of tranſporting them thither, forms another of this gentleman's objections to the intended plan: he likewiſe ſhews the great inconveniences that muſt ariſe if the coloniſts are left entirely to themſelves. The arguments of our Author are by no means thoſe of an unexperienced man, either in politics or in trade; yet his ſtyle, we are ſorry to obſerve, is neither ſo polite as a public admonition, and ſtrictures on the conduct of government, require; nor is it altogether free from rancour.

After having thus ſtated, and in a good meaſure demonſtrated, the truth of his objections, our Author propoſes a ſcheme of ſending convicts to *another place*, which he apprehends will be attended with leſs expence to the Public, and free from the objections to which the former is liable. He would tranſport them to the Iſland of *Triſtan da Cunha*: where, on account of its ſituation, governors and guards would be unneceſſary; and he would have them left there to themſelves, without arms, and with ſuch ſmall boats only as could not quit the coaſt. This iſland is ſituated in lat. 37° 7′ South, and long. 16° 10′ Weſt of London. It is conſiderably larger than St. Helena; well watered, and abundantly ſtocked with ſeals and birds. The coaſt abounds in a variety of fiſh, and the inland parts produce plenty of vegetables and wood.

Near to this iſland are two others (one bearing S. W. by W. diſtance 6 or 7 leagues; the other S. S. W. $\frac{1}{2}$ W. diſtance 6 or 7 leagues) which, though not ſo large, are nevertheleſs ſimilar in their external appearance and productions.

From the ſituation of theſe iſlands, there is no poſſibility of the baniſhed convicts ever eſcaping while they are deſtitute of boats capable of ſailing to the diſtance of 200 miles or upwards, in a rough and

and dangerous ſea; this laſt circumſtance ſeems a ſtrong argument in ſupport of our Author's ſcheme. R — m

Art. 48. *A Letter to the Committee of the Court of Common Council* appointed to conſider of the high Price of Proviſions. 8vo. 1s. Dilly. 1786.

Mr. Merriman, the writer of this judicious letter, aſſerts, that one of the cauſes of the preſent high price of proviſions, is the exceſs of copper money, both lawful and counterfeit, now in circulation. His arguments depend on the principle that 'an increaſe in the quantity of any kind of coin decreaſes its value.' Mr. M. would have copper coin of the real intrinſic value of which it is a ſign. This he thinks would undoubtedly leſſen the quantity of it, and remedy the evil with which trade is at preſent oppreſſed; and alſo be the moſt effectual method of preventing the circulation of counterfeit coin. Many other good obſervations are to be met with in this pamphlet. D.

## SERMONS.

I. Preached before the Ancient and Honourable Society of Free Maſons, in Provincial Lodge aſſembled, in the Church of St. John in Cheſter, June 26, 1786. By Thomas Crane, Miniſter of St. Olave, Cheſter, and Chaplain to Earl Verney, Paſt Provincial Grand Chaplain, Paſt Maſter, and now Provincial Grand Orator. 4to. Cheſter printed, and diſtributed *gratis* among the Brethren.

Where publications are circulated in this liberal, diſintereſted manner, the privileges of authorſhip are extended; for mankind, by common conſent, decline looking a gift horſe in the mouth: nevertheleſs, though we have ever viewed the inſtitution of Free Maſonry in a favourable light, ſo far as we could comprehend it, we cannot deem the pulpit a proper roſtrum for the exhibition of its dictates.

Gen. iv. 17. *And he builded a city.* This Rev. Brother ſuppoſes, that Cain, in his fugitive ſtate, corrected his morals, and *ſeems* to have been received into favour by God; *by* his being permitted to build the firſt city recorded in hiſtory: but—as he had previouſly been permitted to kill his brother Abel, the inference drawn from his building a city, ſeems to require a firmer foundation than mere permiſſion to execute his purpoſe.

'Genuine maſonry, he obſerves, whether applied to *ſhip-building*, or to land ſtructures, had its origin from Divine revelation and inſpiration.'

There is a branch of architecture, which being applied to the conſtruction of floating bodies, is thence termed naval architecture; but we did not conceive that operative maſonry had any affinity with ſhip-building: the ſtone-maſon and the ſhip-carpenter having little in common between them, except ſome few general principles, common alſo to other mechanical profeſſions. How far maſonry may be intitled to a divine origin, may be left for thoſe to *prove*, who *aſſert* it.

We are diſpoſed to receive with thankfulneſs any communications with which ſo reſerved a body as the Free Maſons may vouchſafe to favour us, eſpecially when ſo ſolemnly delivered *ex cathedra*; and therefore ſhall, with all due reſpect, lay before our Readers, Brother Crane's illuſtration of the three principal orders in architecture.

'We

'We MASONS acknowledge no more than THREE perfect and diſtinct ANCIENT ORDERS: the *Doric*, *Ionic*, and *Corinthian*. To give a proper notion of theſe Orders, Architects have compared them to the *appearance* of the *human* body.

'Obſerve a MAN in his luſtre, formed by PROVIDENCE to be Lord over the inferior creation: in ſuch a figure you will find no very ſtriking *beauty*, but much *ſymmetry*, much *ſtrength* and *majeſty*. Akin to this idea is the DORIC Column: not the moſt beautiful indeed; but *neat*, and of *maſculine proportion*.

'Attend to the appearance of a careful MATRON, without brilliant ornaments, and yet not abſolutely unadorned. Such is the IONIC Column, *handſome* and yet *grave*.

'Fancy to yourſelf a blooming MAID, on whom Art and Nature have combined to laviſh every excellent enrichment of dreſs and beauty. This will give an idea of the CORINTHIAN Column, more ſlender than the Ionic, and abundantly more *ſplendid*—the moſt *perfect* of the Columns.'

Such ſimilitudes, being the mere play of the imagination, we may yield our aſſent to them or not, as they ſtrike our fancies with propriety or impropriety; but when a clergyman, in his proper character, ventures to pronounce, publicly, and poſitively, as to hiſtorical facts of high antiquity, and to controvert their general acceptation, we naturally expect to find aſſertion ſupported by ſome kind of vouchers. Brother Crane boldly tells his congregation, that—'theſe Orders, though at preſent they take their names from the *Dorians*, *Ionians*, and *Corinthians*, three States in ancient *Greece*, exiſted among the *Iſraelites* before theſe States received them: theſe Orders came *originally*, as every excellent gift cometh, from GOD; and are *coeval* with SOLOMON'S TEMPLE, which was built to the NAME of JEHOVAH, a name adored by all true Maſons.'

As we cannot ſuppoſe our Author would trifle with his audience, and with the Public at large, by a ſermon, which being now printed muſt come into a variety of hands beſide ours, who are not Maſons; ſo, when we aſk for ſome evidence to juſtify theſe poſitions, we do not expect him, as a rational divine, to elude us by ſlipping into the obſcurity of his lodge, and to cut us ſhort by the plea of their being maſonical ſecrets! Any aſſertions may be hazarded upon ſuch ground.

Myſtical writers, however, while they ſoar in regions far above the ken of thoſe heavy mortals who are cautious of quitting *terra firma*, enjoy their opinions in perfect ſecurity. For our part, we have only to confeſs, that our ſmall ſtock of common ſenſe is ſtaggered by the confident language of incomprehenſibilities; and when a writer like the preſent, undertakes to compound different myſteries together, it is time for us to retire, as we now do, after leaving the following paſſage to the inveſtigation of our Readers:

'But what if the ſpirit of Maſonry, as carried on in the earthly Lodge, will certainly be *introduced* into a *better ſtate* of exiſtence! Saint *John*, in the Book of Revelation, ſpeaking of thoſe events which are to take place at the end of the world, ſaith "the temple of GOD was opened in heaven, and there was ſeen in his temple the ark of his teſtament: and there were lightnings, and voices, and thunderings,

thunderings, and an earthquake and great haïl." Thoſe who have attended the Lodge in the higher degrees of Maſonry will eaſily know the affinity between the earthly lodge and this text: and a complete Maſon will trace Maſonry through almoſt every book of Holy Scripture, but eſpecially the book of Revelation, in which *Saint John* the *Evangeliſt*, by the ſpirit of propheſy, has diſcloſed ſuch ſcenes in heaven, as muſt aſtoniſh and delight every one who is well ſkilled in the higher degrees of Maſonry.'

Were it an eaſy taſk to reduce pious bombaſt into intelligible language, the ſubſtance of all maſonical ſermons whatever might be reſolved into one ſimple propoſition; which is, that Chriſtianity is not a complete moral ſyſtem, without the aid of maſonical principles to ſupply its deficiences, and give it luſtre! **N.**

II. *The Love of Chriſt the Portion and Principle of the Children of God*—at St. Giles, Reading, December 4, 1785, upon the Death of Mrs. Talbot, Relict of the Rev. Wm. Talbot, late Vicar of the ſaid Church. By Wm. Bromley Cadogan, M. A. Rector of St. Luke's, Chelſea, &c. 8vo. 6d. Rivington.

Rom. viii. 35. *Who ſhall ſeparate*, &c.

When Mr. Cadogan viſited Mrs. Talbot in her laſt illneſs, 'ſhe complained, that ſhe could neither ſpeak, think, nor pray; and what, ſays ſhe, muſt I do in this caſe? I told her ſhe muſt leave it to Jeſus, to ſpeak, think, and pray for her: ſhe clapped her hands and ſaid, '*This* Jeſus is all in all.'

If deficiencies, eſpecially in the faculty of *thinking*, can be ſupplied at ſo eaſy a rate, why had not Mr. Cadogan availed himſelf, of this privilege? **B—k.**

III. *Duty to God and the King.* Preached at St. Alphage, London Wall, Auguſt 13, 1786. By James Illingworth, D. D. Lecturer, occaſioned by the late Attempt on the Life of his Majeſty. 8vo. 6d. Matthews.

It ſhould ſeem that Dr. I. differs in opinion from the Privy Council, who deemed Margaret Nicholſon inſane; for he ſpeaks of her attack on the King as 'that very awful attempt upon the life of his Majeſty, which cannot but ſtrike every faithful ſubject with the deepeſt horror and deteſtation at ſo *daring*, ſo *impious* an aſſault!'—It was happy for the poor maniac that ſhe was not *accountable for her conduct* to the reverend lecturer of St. Alphage!

## CORRESPONDENCE.

†††† *Aſtronomicus* may conſult FERGUSON for general and ſuperficial knowledge; and KEIL, DE LA LANDE, LONG, and (above all) NEWTON, for deeper inveſtigation.—*N. B.* We have in our Notes to Correſpondents, frequently requeſted not to be troubled with applications and inquiries of this ſort. It is not our buſineſs, like the Conjurer in the Old Bailey, to "anſwer queſtions, by ſea and land." We give our opinions of books, as they are publiſhed; and ſuch opinions, formed on due conſideration, are, we conceive, ſufficient for a full diſcharge of the duties of our office.

Our thanks are due to S. P. See the following:

*Erratum* in our laſt; p. 351, l. 6 from the bottom, for $1\frac{1}{3}$ read $3\frac{1}{3}$.

Lately

catch word

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In Two large Volumes Octavo, Price 15s. in Boards,

A

# GENERAL INDEX

TO THE

# MONTHLY REVIEW;

From its Commencement, to the End of the Seventieth Volume.

By the Rev. S. AYSCOUGH,

COMPILER OF THE CATALOGUE OF UNDESCRIBED MANUSCRIPTS IN THE BRITISH MUSEUM.

Containing a Catalogue of the Books and Pamphlets characterized, with the Size and Price of each Article, and References to the Reviews wherein the Account of them, with the Booksellers' Names, are inſerted. Alſo an Index to the principal Extracts, Obſervations, and remarkable Paſſages.

Sold by T. BECKET, Pall Mall, and T. LONGMAN, Paternoſter Row.

'AT length this Compilement, ſo long and frequently called for by our Readers, hath made its appearance; and we hope it will anſwer the wiſhes and expectations of thoſe who have been ſo deſirous of ſuch a publication.—Of the manner in which the Work hath been executed, ſome idea may be formed, by attending to the following extract from the Compiler's Preface.

" The plan which was adopted in the Catalogue of undeſcribed Manuſcripts in the Britiſh Muſeum, hath been followed, on the preſent occaſion. The reader may, therefore, conſider the two volumes, now laid before him, as calculated to exhibit the ſtate of Engliſh Literature during a period of THIRTY-FIVE YEARS.

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" As ſo great a number of articles, in one *General Alphabet*, would have rendered it very difficult to conſult, occaſionally, the Books on any particular ſubject, eſpecially *anonymous* publications, the expediency of an arrangement under the proper claſſes, or general diviſions of literary ſtudies, is ſufficiently obvious.

" Anonymous Tracts are, therefore, claſſed under the ſubjects on which they were reſpectively written, and not, after the uſual manner of Indexes, under the firſt, or leading word of the title: a vague and deſultory method, by which the object of the ſearcher is too often eluded, and his wiſh, perhaps, diſappointed at laſt.

" On

" On ſome very important ſubjects, all the publications, as well thoſe which are printed with the Author's name, as thoſe which are anonymous, are entered under the head to which they *chiefly*, if not *immediately* belong; for inſtance, the articles of *Bible*, *Jews*, *Subſcription*, &c. in THEOLOGY; and *America*, *Eaſt Indies*, *Ireland*, &c. in POLITICAL: but this arrangement has not been invariably obſerved,—as, in the ſmaller claſſes, it was unneceſſary.

" In regard to the original Controverſies, all the *Anſwers*, *Replies*, *Rejoinders*, &c. will be found under the name of the AUTHOR, or TITLE of the leading book. The work of the Writer under whoſe name it ſtands, is diſtinguiſhed by the Roman character: the titles of the Anſwers, &c. are printed in *Italics*; and under the Anſwerer's name, his publication will alſo be found. The *anonymous* productions of this nature, are, in general, placed under the name of the *original Author*; or, if it may be ſo termed, in the *Controverſy*: for example, *Lowth*, *Kennicott*, *Middleton*, &c. in the Claſs of THEOLOGY; *Gibbon*, &c. in HISTORY; and *Garrick*, *Chatterton*, &c. in POETRY.

" Tracts relating to particular or popular characters, are collected under the name of the perſon concerning whom they were written: as in the articles relative to *Keppel*, *Pitt*, *Wilkes*, &c. in the Claſs of POLITICAL publications.

" In reſpect to the Prices of Books and Pamphlets, they are given as they ſtand in the Reviews; and it muſt be obſerved, that they are ſometimes the prices *bound*, or in *boards*, or *ſewed*; which it was not poſſible to diſtinguiſh, in every inſtance, with perfect accuracy. The names of the Bookſellers and Publiſhers will be found in the Reviews; to which the reader is conſtantly directed, by the Firſt Volume, or *Catalogue part*, as we may term it, of this Work.

" For the accommodation of thoſe who may wiſh to know what hath been *written by* or *concerning* any particular Author, during the period of the Reviews, an INDEX to ALL the *Names* is added to the TABLE of CONTENTS, of which the Firſt Volume conſiſts.

" In the SECOND VOLUME is given an INDEX to the principal Extracts, Obſervations, and remarkable Paſſages. As theſe materials could not be ſo properly arranged in Claſſes as thoſe of the Firſt Volume, they are wholly comprehended under one General Alphabet; and the particulars are literally copied from the original Indexes, ſubjoined to the different Volumes of the Review."

' To what Mr. A. hath obſerved, we need only to add one remark, *viz.* That even to readers who are not poſſeſſed of ſets of the Review, theſe volumes will be of great uſe, as they may, with ſtrict truth, be affirmed to comprehend the moſt general, and moſt complete *priced* Catalogue that ever was offered to the Public.

' It may be further obſerved, with reſpect to thoſe whoſe ſets of the Review are *incomplete*, that to ſuch perſons the publication before us will be found peculiarly uſeful, as it will, in ſome meaſure, ſupply the want of thoſe volumes of the Review in which their ſets are deficient, and which, perhaps, are no where to be procured.'

REV. March, 1786.

# APPENDIX

## TO THE

# MONTHLY REVIEW,

## VOLUME the SEVENTY-FIFTH.

## FOREIGN LITERATURE.

### ART. I.

*Nouveaux Mémoires de l'Academie Royale*, &c. i. e. New Memoirs of the Royal Academy of Sciences and Belles Lettres of Berlin, for the Year 1783. 4to. Berlin. 1785.

HISTORY OF THE ACADEMY.

THE article of *Aſtronomy*, which conſiſts of extracts from the correſpondence of M. *Bernouilli*, contains fragments of letters from ſeveral learned men. The firſt gives an account of an eſſay on the elements of the orbit of the new planet (Herſchel's), by the R. F. *Fixlmillner*, a Benedictin, and profeſſor of aſtronomy in the Abbey of Cremſmunſter in Auſtria. It is well known that M. Bode, in his hiſtorical eſſay on the new planet, has concluded, from two obſervations, one by *Flamſtead*, the other by *Mayer*, that the 34th ſtar of Taurus, which he no longer found in the place where it was obſerved by the former, in 1690, muſt be the planet obſerved by *Herſchel*. It is alſo well known, that this concluſion has been called in queſtion by ſome of our aſtronomers, who think they have recovered the fugitive ſtar of Flamſtead. M. Bernouilli is, nevertheleſs, of opinion, that the ſuppoſition of M. *Bode* has acquired a new degree of evidence by the reſearches of F. *Fixlmillner*; and he perſiſts in his notion that Flamſtead and Mayer obſerved (the one in 1690, and the other in 1756) the planet in queſtion, but took it for a fixed ſtar *. He gives here a particular account of theſe reſearches. After all, Mr. Herſchel's diſcovery is ſtill meritorious, as he has rectified an error with reſpect to the *nature* of the ſtar in queſtion.

The article of *Meteorology* contains extracts of three letters

* For an account of Obſervations made on this planet by Tycho Brahe, who alſo thought it a fixed ſtar, in the year 1589: See Month. Rev. vol. lxxiii. p. 519.

received by M. Bernouilli from Profeſſor *Van Swinden*. Theſe letters relate to the marine-compaſſes of the late M. Brander, (which the learned Profeſſor conſiders as extremely defective, though he acknowledges the eminent merit of that excellent artiſt), and to a maſterly diſcourſe on the aeroſtatic balloons, compoſed in the Dutch language by the ingenious M. *Damen*, ſince promoted to the chair of natural philoſophy and aſtronomy in the Univerſity of Leyden.

In the article of *Medicine*, the Privy Counſellor, *Cothenius*, firſt phyſician to the late King of Pruſſia, gives an account of three publications for which that ſcience is indebted to Dr *Samoilowitz*, ſurgeon-major to the Senate of Moſcow. The *firſt* is a *Letter concerning the ſalutary effects of frictions with Ice* in the cure of the plague and other putrid diſorders. The *ſecond* is a Memoir concerning the *Inoculation of the Plague*; together with a *deſcription of three antipeſtilential* fumigatory powders; and the *third* is an Account *of the Plague that made ſuch havoc in the Ruſſian empire*, eſpecially in the capital of Moſcow, in 1771.

## Experimental Philosophy.

Mem. I. *Experiments made with a View to determine* the Queſtion, Whether *there is a real Production of Air*, when different Fluids, reduced to elaſtic *Vapours*, *paſs through Tubes made red hot?* By M. Achard.

Mem. II. *Experiments deſigned to aſcertain the Circumſtances in which Air is produced, when Water, either in its fluid State, or in that of elaſtic Vapour, comes into Contact with Bodies of a different Nature, made red hot.* By the Same. The reſult of theſe experimental reſearches of M. Achard is not favourable to the new hypotheſis concerning the compoſition of water, firſt propoſed by Mr. *Cavendiſh*, and which M. *Lavoiſier*, and other eminent philoſophers, have adopted and endeavoured to confirm by a variety of experiments. M. Achard publiſhes his objections under the modeſt form of doubts. He thinks that the phenomena which have been employed to prove that water is a combination of dephlogiſticated air and inflammable air, proves rather that air reſults from the combination of water with the igneous principle. Therefore, according to him, the decompoſition of air muſt produce water, and, conſequently, the experiment on which the new theory of the compoſition of water is founded, cannot be conſidered as a proof that water is compoſed of the two kinds of air, from whoſe combuſtion it is obtained; as the water obtained is not the production, but merely one of the conſtituent parts of the mixed air which has undergone combuſtion. Long and laborious are the reſearches and experiments which our academician has exhibited in theſe two memoirs to juſtify his doubts. *Hear him! hear him!* and learn, curious reader, how ambiguous experiments and experimental reſearches are likely to become, when applied to ſuch ſubtile entities as aeriform ſubſtances.

Mem.

Mem. III. & IV. *Concerning the Alterations which Earths and metallic Calces undergo by their Fuſion with vegetable Alkali.* By the Same.

Mem. V. *An Inquiry into the Nature and Qualities of the red Quinquina, compared with that which has been hitherto employed in medical Practice.* By M. COTHENIUS. This learned Academician begins his inquiry *ab ovo*, as the ſaying is, and gives us a hiſtory of this ſalutary tree, which contains nothing new. His account of the chemical proceſs employed, under his inſpection, to aſcertain the reſpective merit and virtues of the red bark newly diſcovered, and that which has been hitherto in uſe, is curious and inſtructive. The compariſon is circumſtantial, and comprehends every thing relative to the taſte, colour, odour, form, weight, and other qualities of the two ſubſtances, which both come from a tree of the ſame kind. The one is the bark of an older tree; the other the bark of a younger. With reſpect to their comparative merit, our Academician thinks, that as the red contains a greater quantity of reſin and martial earth than the other, its virtues muſt be ſuperior, and proportionably more ſalutary to perſons of weak conſtitutions and lax fibres. His experiments on half a pound of each kind proved to him, that the red bark contained,

Of vegetable alkali 22 gr. the other 30 gr.
Of vitriolated tartar 6 gr. the other 4 gr.
Of martial earth 8 gr. the other 4 gr.
Of calcareous earth 48 gr. the other 37 gr.
Of ſelenitic earth 6 gr. the other 4 gr.

Mem. VI. *Experiments* made with a deſign to determine the two following queſtions:

1ſt, *How the air acts upon fluids, when, by its preſſure on their ſurface, it augments the degree of heat which they acquire in ebullition: and whether a ſimilar preſſure, occaſioned by the weight of another fluid, produces the ſame effect, or if it is only produced by ſome peculiar property of air, and of elaſtic aeriform fluids?*

2d, *What is the proportion or ratio found between the times in which bodies of the ſame nature, and heated in the ſame degree, cool in different kinds of air equally warm, but having a degree of heat inferior to that of the bodies?* On comparing the reſults of theſe experiments, it appears, that there is a palpable difference between the promptitude or celerity with which bodies cool (and conſequently in their aptitude to receive and tranſmit heat) in different kinds of air. In fixed air the refrigeration is performed with the greateſt celerity: it is much more ſlow, and nearly equal in common, phlogiſticated, and dephlogiſticated airs, and it is produced the moſt ſlowly of all in inflammable air.

Our Academician thinks, that the proportion between the degrees in which different kinds of air poſſeſs the property of

contracting and tranſmitting heat, has a remarkable analogy to that ſubſiſting between their ſpecific gravities; and he ſhews the application that may be made of the reſults of his experiments to the animal œconomy and the vegetable kingdom.

Mem. VII. *Experiments made on rotten Wood which ſhines in the dark.* By M. ACHARD. This property of rotten wood is well known; but the nature and cauſe of the light it emits, and the circumſtances which make it appear and diſappear, have not, according to our Academician, been hitherto aſcertained, nor even carefully examined. We have here an account of thirty-one experiments made upon wood in a ſtate of putrefaction; and of theſe we ſhall briefly mention the reſults. From ſeveral of theſe experiments it appeared, that all kinds of wood have the property, when rotten, of ſhining, merely by their putrefaction, and their being impregnated with water; but that, in order to their being phoſphoric, they muſt have arrived at that degree of putrefaction in which the ligneous fibres have almoſt wholly loſt their coheſion, and the wood is become as porous as a ſponge. From others, M. ACHARD concludes, that the ſhining quality of rotten wood cannot proceed from the abſorption of the ſolar rays, as in the Bolognian ſtone, nor from a weak combuſtion and inſenſible inflammation, as in Kunkle's phoſphorus, nor from the influence of electricity. His theory is farther confirmed by a variety of experiments, from which it appears, that all ſpirituous liquors, oily ſubſtances, acid, alkaline, or neutral ſalts, nitre only excepted, deprive ſhining rotten wood of its phoſphoric properties; which circumſtance proceeds from the tendency that all theſe ſubſtances have to ſuſpend putrefaction. It appeared from further experiments, that the light emitted from rotten wood is not ſuſceptible of decompoſition by refraction, and that it cannot paſs through coloured diaphanous mediums—which latter circumſtance M. ACHARD conſiders as ſingular, and difficult to account for.

Mem. VIII. *On a new Kind of flexible Stone.* By M. GERHARD. The *Pietra Elaſtica*, or elaſtic ſtone in the Borgheſe palace, mentioned by F. Jaquier, the Abbé Fortis, and M. Ferber, as an ancient marble, which enters into effervescence with *aqua fortis*, and is compoſed of tranſparent and cryſtalline grains, is already well known by chemiſts. The flexible and elaſtic ſtone, the ſubject of this memoir, is of a different kind; ſimilar indeed to the other in ſome of its properties, but poſſeſſing theſe properties in a higher degree, and others of a ſingular kind, which are not diſcernible in the *pietra elaſtica* of M. Ferber. A piece of this ſtone, held between one's fingers, may be eaſily bent into every form and direction; and when the preſſure ceaſes, it recovers its natural direction and form with the greateſt facility. If a piece, a few inches long, be

be held at the one end, and the motion of a pendulum be communicated to the other, oſcillations are perceived, and ſomething like articulations in the ſtone are felt by the fingers that hold it. It emits an abundance of ſparks when ſtruck againſt ſteel, and cuts glaſs almoſt like the diamond. The other properties of this ſtone, which was diſcovered by M. *Danz*, the king's mineralogiſt, are deſcribed by our Academician; whoſe analytical experiments ſhew it to be compoſed of 92 parts in the 100 of earth of flint, 3 of earth of allum, 2 of calcareous earth, and 1 of iron. He thinks it ought to be conſidered as a new genus in the claſs of vitreous ſtones, and placed between the quartz and the flint.

Mem. IX. *On a new Manner of manufacturing Glaſs.* By the Same. A long and curious piece, worthy of the attention of all directors and operators in the glaſs-houſe.

Mem. X. *An Account and Table of the meteorological Obſervations* made at Berlin in 1783. By M. BEGUELIN.

Mem. XI. *On the Degree of Confidence that may be placed in the barometrical Obſervations that have been made at Berlin, by Order of the Royal Academy of Sciences, theſe laſt* 17 *Years.* By the Same. We have here an ingenious defence of M. BEGUELIN's obſervations. That gentleman's accuracy had been conteſted by one of his academical brethren, not on account of any defect in his manner of obſerving, but becauſe the mercury rote higher in the barometer of *Schiavetto* than in that of the Academy. This is properly a diſpute between two barometers, in which our learned and acute Author takes part with that of the Academy.

## MATHEMATICS.

Mem. I. *A Theory of the periodical Variations of the Motions of the Planets*, Part I. *Containing the general Formulæ of theſe Variations.* By M. DE LA GRANGE —Mem. II. *On the ſecular Variations of the mean Motions of the Planets.* By the Same.—Mem. III. *On the Manner of rectifying the ordinary Methods of Approximation for integrating Equations of the Motions of the Planets.* By the Same.

Mem. IV. *Concerning Cardan's Rule, and alſo concerning Equations, together with ſome Remarks on Equations in general.* By M. DE CASTILLON.

Mem. V. *On the Square of the Velocity in Dynamics*, or the *Science of moving Powers.* By the late M. LAMBERT.

Mem. VI. *On a particular Method of Approximation and Interpolation.* By M. DE LA GRANGE.—Mem. VII. *On a new Property of the Centre of Gravity.* By the Same.—Mem. VIII. *Concerning the Problem of the Determination of the Orbits of Comets from three Obſervations:* the third memoir on this ſubject, in which we have a direct and general ſolution of this Problem. By the Same.

Mem. IX. *Experiments on the Force employed by Men and Horſes in moving Machines.* By M. SCHULZE.

SPECULATIVE PHILOSOPHY.

Mem. I. *Philoſophical Conſiderations on the Tuſculan Queſtions of Cicero.* By M. FORMEY. This preſent memoir does not bring us to the *philoſophical conſiderations:* it is only an *introduction* to them. It is a kind of converſation-piece, wherein there is a great deal of miſcellaneous matter, which, though it does not directly enter on the ſubject, but rather carries us *about it*—and *about it*, yet it is not tireſome nor inſipid; for there is always ſomething entertaining, ſomething ſpirited and ingenious in the loquacity of this Academician.

After a warm eulogy on Cicero as a writer, and ſome keen ſtrictures on the critics and commentators, who have ſhewn ſo little *taſte* and *philoſophy* in their learned remarks on the ancients, he regales us with a tranſlation of the *preface* of Eraſmus to the *Tuſculans*, then with a ſcrap from *Hook*, relative to the characters of Cicero and Julius Cæſar, and finally, with Dr. Middleton's account of the ſcene where the converſations paſſed, which gave riſe to the compoſition of the Tuſculan queſtions. Thus the *Introduction* before us is a kind of literary moſaic, which has coſt our Academician only the trouble of gathering and joining the pieces. We think he will be more original when he comes to the work itſelf; and here we ſhall probably find the philoſophical preciſion of Cicero put to a ſevere trial. M. FORMEY does not ſit down to appreciate his Author, as a young ſtudent would do in the prime of life, when fancy is delighted with the ſublime, and even irregular beauties of the ancients; nor as a claſſical ſtateſman, who takes *Horace* and *Tully* into his rural retreat, to relax his mind, fatigued with the cares of ambition and political conteſt, on the verdant bank, or in the ſhady walk; no—he takes up his Author in an advanced age, after his mind has been accuſtomed to long meditation on philoſophical ſcience; and, without being inſenſible to the charms of claſſical beauty, looks for ſomething ſtill more ſolid, and means to examine the *principles* which *Cicero* laid down, the *concluſions* he drew from them, the *accuracy* of theſe concluſions, and of his *method* of reaſoning. Without this method of proceeding, *ſays he*, we may read the ancients all our lives, and not reap much advantage from them: we ſhall gaze with pleaſure on the flower, but ſhall never taſte the fruit. There is ſomething in this.

Mem. II. *Concerning clear and obſcure, diſtinct and confuſed, Notions, with reſpect to Hiſtory.* By M. WEGUELIN. The public facts recorded in hiſtory, give us only, according to this Academician, the outward bark of the tree of knowledge, while the eſſence of the tree, the *ſpecific* reaſons of facts and events, the

motives and characters of the actors on the public ſcene, which conſtitute the true ſpirit of hiſtory, are clouded with an infinite variety of obſcure and diſcordant ideas. Thus does M. W. expreſs himſelf, and this may be called the text on which he preaches, with great learning and ſubtlety, throughout this memoir, but not always with perſpicuity and order. He is really ſometimes obſcure and confuſed in *his* ideas, and often in his expreſſions There are, nevertheleſs, many judicious and acute obſervations to be met with in his paper, and we may ſay of him what Horace ſaid of Lucilius, *cum flueret lutulentus, erat quod tollere velles.*

Mem. III. *The Oeconomy of ancient States compared with that of modern ones.* By M PREVOST. In this memoir the Academician exhibits, firſt, a compendious view of the manner in which the finances were adminiſtered in ancient governments, whether republican or deſpotic; he then conſiders the expedients, or, as we ſay, the *ways* and *means* to which the ancients had recourſe in caſes of neceſſity, and compares them with thoſe employed by miniſters in modern times. By theſe previous views he is led to inveſtigate and eſtimate the principles of theſe different operations.

We remember not to have ſeen the claſs of *ſpeculative philoſophy* ſo meagre as it is in this volume. The following claſs is much better furniſhed.

BELLES LETTRES.

Mem. I. *On the Population of States in general, and that of the Pruſſian Dominions in particular.* By the Baron DE HERTZBERG, Miniſter of State, and Member of the Academy. As this memoir, which does ſuch honour to the miniſter and his late Sovereign, was publiſhed ſeparately, we took an opportunity, as ſoon as it appeared, of making known its intereſting contents, in our Appendix to Rev. Vol. LXXIII. p. 566.

Mem. II. *Concerning* I. A. DE THOU. By M. WEGUELIN. *Firſt Memoir.* This is a very entertaining and inſtructive piece of biography, in which the celebrated hiſtorian is exhibited to view in his character, education, travels, connexions, and in all his literary and political relations. Theſe relations call up to memory many illuſtrious men in the world of letters, and in the world of buſineſs, whom the curious reader is always glad to meet with again, and to ſee in new groups of good company. We are pleaſed to ſee *De Thou* ſtudying under *Cujas* and *Hottoman*, converſing with *Scaliger*, *Sigonius*, and *Montaigne*, travelling with Cardinal *d'Oſſat*, and, on his travels, viſiting at Florence *Coſmo* I. at Rome *Muretus*, *Fulvius Urſinus*, *Paulus Manutius*, and other learned and illuſtrious men in other places, of which M. WEGUELIN gives now and then very intereſting accounts, accompanied with ingenious remarks.

Mem. III. *On certain Paradoxes in Eloquence.* By M. Borelli. The introduction to this memoir is, if not paradoxical, at leaſt more or leſs chargeable with exaggeration. The eloquent Academician paints in too vivid colours the corruption of taſte, the decline of eloquence, and the degradation of the fine arts, in modern times, unleſs he has his view turned to ſome particular country. When he ſays, that in the pulpit the Chriſtian orators ſpeak the language of the *Lycæum*, dreſs out their diſcourſes with vain frivolous ornaments, that degrade the majeſtic ſimplicity of ſcripture, and, inſtead of attacking vice, and expoſing its deformity, paint it in brilliant colours, that render its aſpect pleaſing,—he cannot ſay that *we* do this; for cold reaſoning has been, generally ſpeaking, *our* method of attack and defence, in the cauſe of religion and morals: and we leave the buſineſs of *painting* both vice and virtue to the gentlemen of the *Exhibition*. When he ſays farther, that at the bar, the *voice of paſſion* is heard inſtead of the *voice of truth*, and that the *clamours* of *hatred* and *vengeance* put to ſilence the ſacred *oracle* of juſtice,—that the eloquence of the honeſt and virtuous heart, which invokes the protection of the laws, is baniſhed the temple of *Themis*, and is ſucceeded by the delirious tranſports of a heated fancy, we ſuppoſe he has in view his native country, where judiciary proceedings are indeed ſtrangely carried on, and where there are fifty *Linguets* for one *Dupaty*. His accounts of the theatre are in a ſimilar tone, and his repreſentation of the *academics*, whoſe epigrammatic eloquence, ſays he, degenerates from the pure taſte of former times, ſhews us *quorſum hæc tendunt*, and throws ſome topographical light on his *Philippic*.

As to the *paradoxes in eloquence* that conſtitute properly the ſubject of this diſſertation, they deſerve a more particular notice. Why he gives the name of paradoxes to the opinions with reſpect to eloquence, which he here combats with great judgment and power of argument, we cannot ſee; for theſe opinions are rather erroneous than ſingular.

In the 1ſt article of this memoir our Academician combats the ſentiment of thoſe who have maintained that Genius *ſtands in no need of* Rules. At the head of theſe are *d'Alembert* and *Diderot*, who looked upon genius ſubmitting to rules, as a ſovereign impriſoned by his ſlaves, and who aſſerted, that it can only become capable of great things when, free from all reſtraint, and following implicitly its inſtinctive propenſity, it ſoars at once to its object, without either conſidering the difficulties it may meet with in its courſe, or the darkneſs in which it may be involved. Such language, ſays our Academician, would be ſcarcely pardonable in that idle and frivolous claſs of men, who fear ſtudy, have an averſion to every thing that is didactic, and who, inſtead of being deſirous of enlarging the ſphere of their taſte

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and pleaſure by an exact diſcernment of true beauties and real faults, are ſatisfied with the enjoyment of ſome momentary ſenſations, which *hinder them from feeling the* tireſome weight or *inutility* of their exiſtence. It is M. LINGUET, more eſpecially, againſt whom our Academician here directs all the force of his literary arms: and *that*, we think, with great ſucceſs; though there be a good deal of logomachy obſervable in the courſe of this conteſt.

In the ſecond article M. BORELLI treats of the *Nature of Eloquence*; and here again we have nothing but controverſy. The learned Abbé *Auger*, author of a juſtly celebrated tranſlation of the moſt illuſtrious Grecian orators, had maintained, in a preliminary diſcourſe, that the *nature* and *eſſence* of eloquence conſiſted in *determining immediately the wills of an audience.* This imperfect and exceptionable definition is here ſeized and taken to pieces by our Academician, who *will* not ſee that in illuſtrating his definition the ingenious Abbé has made amends for its defects. 'We muſt diſtinguiſh,' ſays the Abbé, 'between the *end* of eloquence and the means it employs. Its *end* is to give a prompt and immediate determination to the will. It employs, for this purpoſe, *argument*, which convinces the underſtanding, *imagery*, which ſtrikes and pleaſes the imagination, *ſentiments*, which move and touch the heart.' This will not ſatisfy M. BORELLI; who labours, with more wit and acuteneſs than ſimplicity and ſound reaſoning, to expoſe it as paradoxical.

The third article exhibits an object of diſcuſſion, in which our Author ſeems to triumph over the Abbé, who, ſtrangely enough indeed, excludes from the ſphere of eloquence that kind of public ſpeaking which the ancients called the *demonſtrative* (whoſe ſcope was to praiſe or to blame), and confines eloquence to the *deliberative*, which is deſigned to adviſe or diſſuade, and the *judicial*, which is employed to accuſe or to defend. The Abbé, we believe, will ſtand alone in this opinion, by which he ſtrikes out of the liſt of orators thoſe famous panegyriſts of his own country, *Maſſillon*, *Flechier*, *Fenelon*, and *Boſſuet*, to whom if *eloquence* be denied, we muſt reject all ancient and modern definitions of that noble talent, and inquire anew *in what it conſiſts?*

In the fourth article M. BORELLI diſcuſſes the following queſtions: *To whom did the Greeks give the appellations of orator, philoſopher, and ſophiſt? and can the art of ſpeaking be ſeparated from the art of thinking?* There is nothing uncommon in his ſolution of theſe queſtions.

Mem. IV. *On the Cauſes of the Diverſity of Languages.* By the Abbé DENINA. This learned and ingenious Academician, who thinks that a long time muſt have paſſed before men could learn to join together two ſyllables, is alſo of opinion, that it

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was in the temperate or warm climates of our globe that languages were progreſſively formed. However, in this memoir it is not his deſign to go back to the origin of mankind, nor to inquire what was their primitive language. He ſets out from facts palpably aſcertained, from the language that was perfectly formed in Aſia Minor a thouſand years before the Auguſtan age, which, whatever was its origin, did not differ from that which was ſpoken in the eaſtern parts of Europe, in Greece, in Sicily, and in thoſe parts of Italy which are now comprehended in the kingdom of Naples. From the different dialects of this ancient Aſiatic language, the Latin, according to our Author, was formed, and became univerſal in the Weſt. Having acquired its higheſt degree of perfection at the very period when the Romans had ſubdued Spain and Gaul, it made, with facility, a rapid progreſs in theſe provinces, becauſe there were no books in the ancient language of the Cantabrians, Celts, or Gauls. Thus in the four hundred years, during which Spain and Gaul remained under the dominion of the Romans, the language of theſe imperious victors gained ſuch an aſcendant as extinguiſhed totally the ancient language of theſe two nations; and though the Latin language was corrupted by a variety of circumſtances well known, it ſtill remained predominant; nor did its corruption contribute to revive the ancient Celtiberian and Gallic languages. Even the Barbarians, who invaded the empire, accuſtomed themſelves, for various reaſons of policy and conveniency, to the language of the vanquiſhed Romans; and though they mingled with it ſeveral of their own terms, yet the Latin, ſuch as it was, ſtill prevailed, and was the baſis of the Italian, Spaniſh, and French languages.

This *we all* know: but we do not perhaps know, in all the curious detail with which the Abbé DENINA explains the matter, whence proceeded the diverſity of theſe languages that came from the ſame root. The cauſes of this diverſity are, according to our Author, *phyſical*, *moral*, or *mixed*. Thoſe of the firſt claſs comprehend climate and peculiarity of organization: no two nations (ſcarcely two cities or villages) have preciſely the ſame accent: hence long vowels are ſometimes abridged or ſuppreſſed, and ſometimes lengthened and doubled, ſo as to become dipthongs; conſonants are changed or loſt; ſyllables are inverted by the tranſpoſition of letters; and thus, at length, words are changed both in ſound and figure: theſe obſervations, again, have not the merit of novelty; but the examples by which they are illuſtrated are curious. With reſpect to climate, our Academician obſerves (as the learned *Ihre*, in his excellent gloſſary, had obſerved before him) that words, formed in a warm or temperate region, when they paſs into cold climates, loſe, as it were, a part of their body or ſubſtance. The ancient Scythians retained

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no more than the firſt ſyllables of the words, which they derived from the Greeks, and eſpecially from the people of Aſia Minor: and all the northern European nations have ſhortened the words, which they have adopted from the Greeks and Latins. Thus the Turks metamorphoſed *Conſtantinopolis* into *Stamboul*, and the Lombards *Mediolanum* into *Milan*.

But the principal cauſe of the diverſity of languages, which come from one common root, is, according to M DENINA, the variation above mentioned in the pronunciation of letters, vowels and conſonants, that takes place in different nations. He illuſtrates this by a great number of examples, which take up the whole of this memoir, and which we leave to the contemplation of the curious.

Mem. V. *On the Origin of the German Language.* By the Same. Who would think it? It comes from the Greek, though the Greek is no more like it than *Hyperion* is to a *Satyr*. There is a large portion of grammatical learning in the proofs of this genealogy, but there is alſo, in ſeveral places, a good deal of the *longe petitum*.

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## ART. II.

TABLEAUX *des anciens Grecs et Romains*, &c. i. e. An Account, accompanied with Engravings, of the ancient Greeks and Romans, and other cotemporary Nations; in which the private Life, the Cuſtoms and Ceremonies, the Arts and Sciences, the political and military State of the Ancients are amply deſcribed. Firſt Volume. 4to. With Plates taken from ancient Statues and authentic Monuments. Paris. 1785.

THIS work is publiſhed in numbers, which appear ſucceſſively every two months. If its Author, or Authors, perform what they promiſe, it will contain all the moſt curious and intereſting diſcoveries that have been made, and the accounts that have been given, of the literary and philoſophical treaſures of antiquity: in ſhort, we are to have here, in a moderate compaſs, the riches that are diſperſed through a multitude of volumes. Sages, legiſlators, prieſts, poets, military commanders, and artiſts, with the manners of the people they inſtructed, governed, defended, or poliſhed, are to be exhibited to view in their moſt intereſting aſpects, ſo as to preſent a valuable collection of antiquities, in which a great variety of readers will find abundance of inſtruction and entertainment. We have now before us only the firſt number of this *promiſing* work, uſhered in with a *preliminary diſcourſe*, in which the Author diſcovers capacity and knowledge, but not without a mixture of affectation and pertneſs, that engender now and then falſe thoughts, obſcure antitheſes, and injudicious parallels. He conſiders, in this diſcourſe, the ſtate of political ſcience and conduct among the ancients,

ancients, and compares it with that of the moderns; and if we are to believe him, all was *action* and *invention* among the former, while all is *repetition* or *imitation* among the latter, both in the exercise of the arts, and in the practical science of government. This comparison (which we leave the judicious reader to appreciate) is reinforced by a *pretty* conceit (or *concetti*, as the Italians call a certain kind of description that deviates from truth and simplicity); for our Author, looking at human nature through *his* perspective, perceives its *adolescence* in the first nations of the East, its *manhood* in the Grecians, Carthaginians, and Romans, and its *old age*, or (as he also terms it) the age of prudence, and sometimes of pusillanimity, in modern Europe. One would think, from all this, that the human species, in our time and day, is verging towards dotage.—No such thing: for our Author, after having mortified us by a humiliating comparison, claps us on the shoulder, and raises us again into consequence, for the sake of two French kings, who luckily happened to come into existence in *modern* times; and he roundly gives the lie to those detractors of the age of Lewis XV. and Lewis XVI. who represent it as a *period of decline and degradation*; 'for,' says he, 'it is in the present age that a *second* faculty of the human mind (what he means by the epithet *second* we cannot conjecture) has been carried to a high degree of perfection, even the faculty of *philosophising* or reasoning:—and if the art of painting is sublime, the art of following truth, *through all its possibilities*, does not require less inventive *genius*.' And again—'The present age is far from being destitute of vigour; nay, when we consider the productions of this *second* faculty of the mind, which was formerly, as it were, in a state of inactivity (*i. e.* among the ancients), we must conclude that ours is the age of the *multiplication of* GENERA (*kinds* in English, which comprehend the *species*), *and not the age of annihilation*.' Would not one conclude from such mysterious language, that the Author did not intend that we should come at his meaning? We guess it, however, and suppose he meant to say, that the ancients surpassed us in *invention*, and that we surpass them in *reasoning*. The latter is certain; the former may be true; for the inventive spirit of the ancients was not restrained in its flight by that scientific or logical precision which is *supposed* to regulate, and consequently to check, the flights of modern genius. We say *supposed*, because it is not our intention to quarrel with any modern poet, philosopher, or orator, who may be offended at this distinction; nor even with the *balloon geniuses*, who have certainly soared much higher than the ancients, and have been much less checked in their flight by reason or common sense.

But this *preliminary discourse* has perhaps kept us too long from the work itself, in which our Author appears to more advantage

vantage than in the parallels we have been now conſidering. The ſix articles, accompanied with as many engravings, that compoſe this firſt number, are as follow: 1ſt. A portrait of *Homer*, with remarks upon the life and productions of that immortal bard, and obſervations on the poetical ſpirit of the ancients. This article is followed by the portrait of an *Augur*, finely delineated and coloured; and with this we have an hiſtorical eſſay on the prieſtcraft of the Augurs, and the religion of the Romans, from the time of Numa Pompilius to the eſtabliſhment of Chriſtianity. In the third we have the hiſtory of the *Amazons*, i. e. all that our Author has been able to ſcrape together concerning thoſe maſculine ladies, whoſe dreſs and air are well repreſented in the annexed engraving. A *Spartan woman* appears in the next article, and is accompanied with an eſſay on the character of the ſex in ancient times. 'The virgins of Sparta (ſays our Author) even in their *nudity* were not *naked*: the *public decency* (of ſentiment, no doubt, he means) covered them with its impenetrable veil. It is, accordingly, a corrupt people alone that can diſcover *nudity* in women: Nature has formed nothing *naked*: the knowledge of nudity is the fruit of a licentious fancy, and the conſequence of a corrupt and degenerate ſtate of ſociety.' This thought, which has much truth in it, is here falſified or obſcured, by ſhifting the ſame term from one ſignification to another, and a reflexion which ſeems well founded in the nature of things, aſſumes an air of paradox by the equivocal uſe of the terms in which it is expreſſed. *Nudity* and *nakedneſs* are ſynonymous terms: therefore the virgins of Sparta in their nudity were really *naked*; but like Eve in the garden, *they were* NAKED *and were not* ASHAMED, i. e. they had not that conſciouſneſs of ſenſual deſires, become irregular by their predominance, that renders *nudity* a ſource of *ſhame*. This language is plain—but your *nudity*, Sir, without *nakedneſs*, is quaint and ambiguous, and will expoſe you to the cenſure of grammarians, and to the indignation of tailors and mantua-makers, who, beſide, will ſtare their eyes out, when they read theſe words,—*Nature has formed nothing naked.* The laſt article of this volume, contains a hiſtory of the conjugal ſtate of the Romans, conſidered under four periods, when their morals were pure, when they began to decline, when they were groſsly corrupted, and when they were totally extinguiſhed.

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## ART. III.

*Hiſtoire et Mémoires de l'Academie Royale des Sciences*, &c. i. e. The Hiſtory and Memoirs of the Royal Academy of Sciences at Paris, for the Year 1782. Paris. 1785.

### GENERAL PHYSICS.

Memoir I. *CONCERNING a Method propoſed for deſtroying the* Mephiticiſm *of neceſſary Houſes.* By M. FOUGEROUX

ROUX DE BONDAROY. We ſhall in a ſubſequent article have occaſion to mention the antidote of M. *Janin* (which is here expoſed in all its inſufficiency), and to ſhew that his method of extinguiſhing *mephiticiſm* by vinegar was not only inſufficient but noxious, and ſo affected the commiſſaries of the Academy, who were appointed to examine it experimentally, that their lives were endangered.

Mem. II *On the Nature of elaſtic aeriform Fluids which eſcape from animal Subſtances in Fermentation.* By M. LAVOISIER. This inveſtigation is nearly connected with the ſubject of the preceding memoir, and ſhews the Academician's zeal for uſeful diſcoveries, ſince he could go through a ſeries of the moſt diſguſting experiments, in order to come at the knowledge of truths or facts that might tend to public utility.

M. LAVOISIER, in conſequence of theſe experiments, found, that excrements, recently emitted, produced more aeriform fluids than thoſe that have undergone a long fermentation in the receptacles of our ſuperfluities,—that in both, the fluid produced is a mixture of inflammable air and fixed or gaſous air; but that, in the former (i. e. the recent matters) the proportion of inflammable air is as 2 to 24, while in the latter it is as 9 to 24. Our Academician is alſo induced, by his experiments, to think, that this proportion of inflammable air encreaſes progreſſively. The acids yield a conſiderable quantity of gaſous air when mixed with *matters* of an ancient date, and the cauſtic alkalies, or lime, ſuppreſs the production of aeriform fluids.

Such were the reſults of the experiments contained in this memoir, when the *matters* in queſtion were not immerſed in air; when repeated, with the introduction of a certain quantity of atmoſpherical or *vital* air into the glaſs veſſels, the reſults were the ſame, with this exception only, that a ſmall portion of the vital air was deſtroyed, probably in conſequence of its combination with a portion of the inflammable air, which eſcaped: In a word, the air became leſs ſalubrious on account of the greater quantity of mephitic air that was mixed with it.

It follows from theſe experiments, that the mixture of acids with the fœtid matters in queſtion, inſtead of preventing, muſt unavoidably augment the danger of *mephiticiſm*. The cauſtic alkalies, or lime, produce, on the contrary, a ſalutary effect; not merely as they ſuppreſs the eruption of aeriform fluids (which ſuppreſſion is but momentary); but as they really abſorb a large quantity of the calcareous or chalky acid. This air is, in effect, the moſt dangerous; for as it is heavier than the common air, it remains at the bottom of the privies, and even retains there the inflammable air which is mixed with it; whereas the inflammable air, when alone, riſes with rapidity into the atmoſphere.

It is in conſequence of this obſervation that Monſ L. propoſes, as the moſt effectual method of deſtroying mephiticiſm, the uſe of lime

lime and alkaline *lixivia*, and the opening a free courſe to the light inflammable air, which will complete the buſineſs.

He thinks there is little reaſon to apprehend the diſengagement of hepatic gas, of which he perceived no indications in the courſe of his experiments.

Mem. III. Obſervations *made in* 1781 *in a Voyage along the Coaſts of Lower Normandy*. By M. LE GENTIL. Theſe obſervations regard, 1*ſt*, the time of the ſpring tides on the Norman coaſts; and, 2*d*, a certain kind of ſand or earth peculiar to theſe coaſts, which makes a rich manure.

NATURAL HISTORY and BOTANY.

Mem. I. *On the Worms found in Truffles, and the Flies which they produce*. By M. MORAND.—Mem. II. *Obſervations on a large Bone found in the Earth at Paris, and alſo on the Conformation of the Bones of the Head in cetaceous Animals*. By M. DAUBENTON. This bone was for ſome time a *bone of contention* among the naturaliſts, as, on account of its extraordinary ſize, it became an object of ſpeculation and conjecture; and eſpecially as it was too large to belong to any terreſtrial animal now exiſting on the known part of our globe.

M. DAUBENTON gives, in this memoir, an account of the reſearches that led him to conſider this bone as a portion of the cranium of a large whale. The ſkeleton of a ſmall one that is to be ſeen in the king's collection *(au cabinet du roi)*, furniſhed points of compariſon that confirmed our Academician in this idea. It is to be obſerved, that this bone is not properly a foſſil (that is, formed of a ſtony matter, which has aſſumed the ſhape of the bone by being filtrated into its ſubſtance and deſtroying its organization); it is a bone, in its primitive ſubſtance, and very little altered by having been buried in the earth.

Mem. V. *On the Cauſes which produce three Kinds* of (what the Author calls) *Herborizations* (i. e. delineations of trees, ſhrubs, plants, and other ruſtic figures) *on certain Stones*. By *the Same*. Theſe agreeable phenomena, which we take the liberty of calling *herborizations* (adopting, for the ſake of brevity, the name given to them by the French naturaliſts), are obſerved on different kinds of ſtones, ſome tranſparent, ſome opaque. They are all acknowledged to be accidental, and the effects of colours imparted to the ſtones, not artificially, but by nature. The queſtion is, Whether theſe accidents originate *always*, or only *ſometimes*, from foreign bodies of the vegetable kingdom incloſed in the ſtone? M. DAUBENTON does not think that the ſolutions hitherto given of this queſtion are accurate or ſatisfactory. He has therefore examined it anew: and his obſervations have terminated in the diſcovery of *three* diſtinct kinds of *herborizations*.

The firſt kind he obſerved in certain ſtones, among which are the agats or *dendrachates*, which exhibit parts of plants or ſhrubs

ſhrubs delineated with ſuch exactneſs, that we eaſily perceive the *kind* of plant or ſhrub to which they belong. The agats alone furniſhed him with nine ſpecies of known plants, indicated by their herborizations.

The ſecond kind of herborization originates from an iron ore which is depoſited in the ſtone, and whoſe grains are diſpoſed in ſuch a manner as to exhibit ramifications. Several ſpecies of calcareous ſtones and marbles furniſh ſpecimens of this ſecond kind.

The third is diſcernible in rock-chryſtal and quartz; and here, according to our Author, the herborizations are formed by ſmall void ſpaces in the middle of theſe ſtones, by which accident their tranſparency is clouded, and their homogeneity is deſtroyed.

The herborizations obſerved on the ſtones of Florence, and thoſe of Nagueza in Spain, will be the ſubject of another memoir.

Our Academician has examined, with the ſame attention, the impreſſions of plants that are to be found on the *ſchiſtes*; and here he obſerved ten ſpecies, which anſwer perfectly to plants that grow in the countries where the quarries of theſe ſtones are ſituated.

Theſe reſearches, as the Hiſtorian of the Academy obſerves, may lead to curious and important diſcoveries relative to the origin and formation of ſubſtances in which heterogeneous bodies are obſerved. We ſee, for example, that at the epocha of the formation of theſe ſchiſtes, the ſame country had already produced the ſame vegetables that it now furniſhes; and that before the formation of agats, there exiſted grounds, covered with the productions of the vegetable kingdom. Obſervations of this kind are multiplied from day to day; and the period will probably arrive when they will become uſeful materials for the formation of a *general theory* of the earth, while, in the mean time, they tend to overturn the ſyſtems that have been erected with too much precipitation.

This prediction of the academical Hiſtorian, however pompous and *philoſophical* in its aſpect, promiſes much more than either he or his ſucceſſors will be able to accompliſh, if they ſtill go on in their goodly way of forming theories of a *work*, without any regard to the energy of the *worker*. That vegetables were formed before ſtones, or ſtones before vegetables, is a matter of little conſequence to the theory in queſtion; this only indicates, in one inſtance, the order of the ſucceſſive exiſtence, and of the ſucceſſive modifications of the parts of a WHOLE. Were this order unfolded in every inſtance, and all the properties and arrangements of individual beings expoſed to our view (and ſo far we ſhall never go), even ſtill the theory would be incomplete:

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it would only exhibit the *whole* as a chain in the air hanging upon *nothing*; it is like giving the theory of a watch by the obſervation of its wheels, without conſidering the main-ſpring, and the intelligence and volition of the man that made it.

Mem. VI. *Obſervations on the Beryl, or Aqua Marina.* By M. SAGE. This ſtone, which is denominated *aqua marina* when its colour has a blueiſh caſt, and *beryl* when it comes nearer to a green, is generally found in ſtriated and truncated priſms. It was at firſt only known in its rounded, and not in its cryſtallized form; but ſince natural hiſtory has been more cultivated, and a more extenſive correſpondence has been carried on between thoſe who are zealous for its improvement, opportunities have been multiplied of procuring theſe ſtones, as they are found in their native bed, and there they always have nearly the ſame form. Of thoſe which M. SAGE preſented to the academy, ſome were brought from Saxony, others from the mountains of Siberia.

## CHEMISTRY.

Mem. I. *On the Action of the phoſphoric Acid upon Oils, and the Combination of that Acid with Spirit of Wine.* By M. CORNETTE. The laborious Academician here purſues the important deſign he has formed of combining oils, both expreſſed and eſſential, with all known acids. After having ſhewn the phenomena which theſe oils exhibit, when they are ſubjected to the action of mineral acids, he conſiders here the action of the phoſphoric acid upon theſe ſubſtances. This acid never acts but when it is in a high degree of concentration; and this action does no more than alter expreſſed oils, without forming with them any durable combination; but the eſſential oils, or, at leaſt, ſome of their conſtituent principles, eaſily combine with the phoſphoric acid. This ſame acid exerts a certain action upon ſpirit of wine, and, by this, our Academician has ſucceeded in compoſing an ethereal liquor; but he has not carried his experiments ſo far as to obtain a real phoſphoric ether. He has, however, ſhewn its poſſibility, and has pointed out the means of producing it.

Mem. II. *An Analyſis of the ſulphureous Ore of* Biſmuth. By M. SAGE. From each quintal of this ore, 60 pound weight of biſmuth is obtained. M. SAGE compares it with an artificial combination of biſmuth and ſulphur, which exhibits almoſt the ſame forms and the ſame phenomena with thoſe of the natural ore.

Mem. III. *Analyſis of the arſenical Ore of Antimony.* By the Same. This ore, which is found in the mines of Allemont in Dauphiny, contains a much greater quantity of antimony than of arſenic, and is not altered, like the arſenical pyrites, by being expoſed to the air.

Mem. IV. *On a Kind of Iron Ore, which is argillaceous, reddiſh, priſmatic, and articulated.* By the Same. This ore, which is cryſtallized into priſms, not unlike thoſe of the baſaltes, is found in Germany: it acts upon the magnetic needle: when it is ſubmitted to the action of a warm fire, its form undergoes no change, but the priſms loſe a part of their volume: the colour of the ore alſo becomes black; and in this ſtate it is the moſt ſuſceptible of being attracted by the magnet.

Mem. V. *Analyſis of a new Kind of Mercurial Ore, under the Form of ſolid Lime, which is found at* Idria *in* Frioul. By the Same. The mercury in this ore is combined with vital air, and forms a kind of natural precipitate *per ſe*. The quintal furniſhes, by diſtillation, 91 pounds of fluid mercury; and there remains a grey powder, which was found to contain ſilver.

Mem. VI. *On the Augmentation of Weight which Sulphur, Phoſphorus, and Arſenic receive when they are changed into Acids.* By M. BERTHOLLET. This Academician having diſtilled mixtures of nitre and ſulphur, and of nitrous acid and ſulphur, the firſt experiment produced vitriolated tartar, the ſecond vitriolic acid, which he combined with heavy earth; and the two experiments concurred in proving, that in order to the formation of the vitriolic acid, there was combined with the ſulphur the half of its weight of vital air.

By diſtilling the nitrous acid upon phoſphorus, phoſphoric acid is obtained; and, in this operation, the phoſphorus is charged with a quantity of vital air, equal, and even ſomewhat ſuperior to its weight. This proportion comes very near to that which M. LAVOISIER obſerved, when he produced phoſphoric acid by combuſtion.

By ſimilar experiments M. BERTHOLLET has proved, that white arſenic, in its change into an acid, is combined with about a ninth part of its weight of vital air.

Mem. VII. *Obſervations on the ſpontaneous Decompoſition of certain vegetable Acids.* By the Same. As the Academician thinks, that a careful obſervation of the phenomena that are exhibited in this decompoſition, may lead to uſeful diſcoveries concerning the nature of acids, and even bring us, in time, to the knowledge of that which conſtitutes the principle of acidity, he has made a great number of experiments relative to this object, for which we refer the chemical reader to his memoir. We ſhall only mention one of the facts that has been diſcovered and aſcertained by theſe experiments, and that is, that ſalt of ſorrel, employed as an antiſeptic, or preſervative againſt putrefaction, is much ſuperior to cream of tartar.

Mem. VIII. *On the Cauſticity of Alkalies and of Lime.* By the Same. In order to diſcover the cauſe of this cauſticity, M. BERTHOLLET examined the effects of the action of cauſtic alkalies

kalies upon animal ſubſtances: in this action, a real combination takes place; the alkalies loſe their cauſticity; and, when they are mixed with acids, no effervescence enſues. This proves, that it is not by ſeparating the calcareous or chalky acid from animal ſubſtances, that cauſtic alkalies deſtroy their organization; for in this caſe the animal ſubſtance is precipitated, and is no longer ſuſceptible of putrefaction. If this ſubſtance be precipitated by a mixture of alkali with metallic ſolutions, it comes into combination with the metals; but if calcareous ſolutions are employed, this combination does not take place: whence it follows, that lime has not, like the alkalies, a real tendency to combination with the animal matters, and only acts upon them by its affinity with water. This obſervation ſeems to ſhew why magneſia (which, though it has ſeveral properties in common with lime, is not, like lime, ſoluble in water) exerts no action on animal ſubſtances. Several other chemical phenomena are here explained by this obſervation.

Mem. IX. *Concerning a Method of conſiderably augmenting the Action of Fire and Heat in chemical Operations.* By M. LAVOISIER. Our ingenious Academician, after having ſhewn the inconveniences and defects that accompany the glaſſes of *Tchirnhauſen*, *Trudaine*, and others, notwithſtanding the remarkable effects they have produced, in fuſing bodies that had long been deemed infuſible or refractory, propoſes a method of augmenting the activity of heat, leſs expenſive, and alſo more applicable to chemical operations. This method conſiſts in employing *vital* *, inſtead of common air, as aliment to the fire. This air conſtitutes no more than a fourth part of the air of the atmoſphere: and it is well known that this is the only part that feeds and foſters the fiery element.

Experience has already proved the ſucceſs of the ingenious method here propoſed. M. LAVOISIER is the firſt chemiſt who has ſucceeded in melting *platina*, merely by directing a current of vital air (contained in a bladder preſſed with the hands) to a coal on which ſome grains of that metal were placed. To obtain this current of air with more facility, and to direct and manage it at pleaſure, ſome inſtrument leſs uncouth than the bladder was neceſſary. Our Academician therefore contrived an

* The ſame that is called *dephlogiſticated air* by Dr. Prieſtley, who firſt diſcovered it. Later experiments having proved that this is the only air capable of ſupporting the life of animals endued with reſpiration, it acquired, on this account, among the French chemiſts the denomination of *vital air*. Dr. Prieſtley obtained it principally from the combination of minium and ſeveral other ſubſtances with the nitrous acid: M. Lavoiſier, about the ſame time, or rather ſomewhat later, obtained it from the reduction of mercury precipitated *per ſe*.

hydraulic bellows, which is here deſcribed, and which anſwers theſe purpoſes.

Mem. X. *Deſcription of an Apparatus adapted to the Management of different Kinds of Air (in the Experiments which require them in a conſiderable Volume), by rendering their Currents uninterrupted, perfectly uniform, and variable at Pleaſure, and by giving, at each Inſtant, the Meaſure of the Quantities of the Air that are employed, with the utmoſt Preciſion.* By M. MEUSNIER. This apparatus is an improvement upon the hydraulic bellows of M. LAVOISIER, which has given that excellent inſtrument a very high degree of perfection, and rendered it ſignally uſeful in the greateſt part of the experiments made with aeriform fluids.

Mem. XI. *Concerning the Effects which a violent Degree of Heat produces on precious Stones.* By M. LAVOISIER. This indefatigable and acute naturaliſt gives here the reſult of the experiments he had made, by means of the intenſe heat produced by a current of vital air, on the diamond, the ruby, the ſapphire, the topaz, the emerald, the chryſolite, the ordinary and Syrian garnets, the amethyſt, and the adamantine ſpar of *Bergman*. His reſult is, that precious ſtones may, in a general point of view, be divided into five claſſes: 1ſt, the *diamond*, which has the peculiar and excluſive property of burning, like other combuſtible bodies, and is perfectly diſſipated by a certain degree of heat: 2dly, the *ruby* and the *ſapphire*, whoſe colour is fixed—which are ſoftened by fire, ſo as to unite in one body without loſing their principal properties, and whoſe weight ſuffers no diminution by the moſt violent heat: 3dly, the ſtones whoſe colour is deſtructible and volatile, but which, in other reſpects, exhibit the ſame phenomena with the ruby: 4thly, the ſtones which are half fuſible, loſe, by fire, a fifth of their weight, are perfectly diſcoloured, and, after having been expoſed to a violent heat, melt into white and opaque globules, ſimilar in their appearance to white quartz or biſcuit of porcelain: ſuch are the *topaz* of Saxony, the *topaz* of Braſil, and the *ruby* of Braſil: 5th, the *emerald*, the *chryſolite*, and the *garnet*, which loſe their colour and melt quickly into an opaque, and coloured, glaſs.

M. LAVOISIER propoſes, in another memoir, to give an account of his experiments on earths, and ſubſtances that have been deemed the moſt refractory; he mentions here only ſome of their reſults, which are as follow:

Gold and ſilver, expoſed to the action of this new fire, are volatilized; all other metals burn in it with a flame more or leſs conſiderable, and differently coloured, until they are entirely diſſipated. Metallic calces emit flame alſo, as does likewiſe heavy earth; and this confirms the opinion of *Bergman*, who conſiders this earth as metallic, though its *regulus* has not hitherto been obtained.

It alſo appears, from theſe experiments, that earth of alum is completely fuſible, and that the reſult of its fuſion is a vitreous ſubſtance, opaque, and exceeding hard; that none of the three alkaline earths are fuſible, though they may all ſerve as diſſolvents, and, in effect, do communicate (particularly calcareous earth) a very high degree of fuſibility to the other earths with which they are combined. All flint-ſtones are fuſible; even the quartz gives ſigns of fuſion; but rock-cryſtal remains abſolutely refractory. Finally, all ſalts are volatilized when expoſed to the action of the fire under conſideration.

Mem. XII. *On the Combination of nitrous Air with reſpirable Air, and the Concluſions that may be drawn from this Combination with reſpect to the Degree of its Salubrity.* By the Same. In this memoir the Academician celebrates, with juſtice and candour, the diſcoveries of Dr. *Prieſtley* relative to the airs here mentioned, and his happy and ingenious application of theſe diſcoveries to ſuch important purpoſes as the meaſuring the purity and ſalubrity of the air we breathe. He at the ſame time obſerves, that naturaliſts are not yet agreed, in practice, either about the beſt method of forming the mixture of the two airs, or the concluſions that may be drawn from this operation. The method of Dr. *Prieſtley*, though not liable to the inconveniences and defects which attend that of the Abbé *Fontana*, gives us only the proportional quantity of dephlogiſticated or vital air, in its combinations with the different airs which are examined; but it does not furniſh (according to our Academician) the true ſolution of the problem, which conſiſts in determining the preciſe quantities of vital air and mephitic air which are contained in the air that is ſubmitted to examination. To this object, M. LAVOISIER has given a peculiar and laborious attention; and, after a ſeries of the moſt accurate experiments, he has found, that from 66 to 69 parts of pure nitrous air are required to abſorb 40 parts of vital air, alſo in a ſtate of purity. He has therefore already got ſo far in the ſolution of the problem, as to know within a hundredth part, the quantity of vital air that is contained in the air ſubmitted to examination: he has even aſcertained with more preciſion the proportional quantities of this air in the different fluids on which experiments are made. This accurate view of the matter, which M. LAVOISIER propoſes carrying to a ſtill higher degree of preciſion, is, perhaps, already ſufficient for all the uſeful purpoſes that are intended to be anſwered by this inveſtigation: for it is probable that more minute differences in the quantity of vital air, which the air of the atmoſphere contains, would be imperceptible with reſpect to the ſalubrity of the air, and its effects on the animal œconomy.

Mem. XIII. *General Conſiderations on the Solutions of Metals in Acids.* By the Same.

Mem. XIV. *Concerning the Precipitation of metallic Subſtances by one another.* By the Same.

Mem. XV. *Concerning the Union of the* OXYGINOUS *Principle with Iron.* By the Same.

Mem. XVI. *Concerning the Affinity of the* OXYGINOUS *Principle with the different Subſtances to which it is capable of being united.* By the Same.

Theſe four memoirs we leave to the peruſal of the curious in chemical operations. We ſhall only inform them that M. LAVOISIER gives the name of *oxyginous principle* to that part of the vital air which enters into the compoſition of all the acids that unite themſelves with metals, reduces them to calces, and produces vital air when it is combined with the principle of heat.

## METEOROLOGY.

Memoir *concerning Currents of Air in oppoſite Directions, on Occaſion of two aeroſtatic Globes obſerved on the 1ſt of December* 1783. By M. LE MONNIER. It is well known that currents of air in oppoſite directions, really exiſt in the atmoſphere, and ſerve ſometimes to foretell its variations. As the height of the clouds cannot be exactly aſcertained, and as it often happens that their change of form is an obſtacle to the accurate obſervation of their direction, they afford only imperfect and uncertain means of determining the currents of the atmoſphere. The *balloons*, whoſe height, direction, and velocity may be nearly known, have aſſiſted our Academician to make obſervations on the currents with more preciſion. Accordingly (with the permiſſion of the planets), he pointed his teleſcope at the two aeroſtatic globes mentioned in the title of this memoir, which ſet out from the ſame ſpot, and much about the ſame time, but roſe to different heights, and fell in different places.

## ASTRONOMY.

Mem. I. *The Theory of the Attraction of Spheroids, and of the Figure of Planets.* By M. DE LA PLACE. The theory (to uſe the words of the academical Hiſtorian) exhibited here, is one of the moſt important parts of the mundane ſyſtem, and has preſented to geometricians many difficulties, which, happily, have only animated their efforts to ſurmount them. Several illuſtrious mathematicians have ſolved ſucceſſively, more or leſs completely, a part of theſe difficulties. It only remained to finiſh the work they had ſo happily begun, to employ on the ſame queſtions the new methods with which analytical ſcience has been enriched, to exhibit in a collected point of view the ſeparate labours of preceding aſtronomers, and to add to them what was ſtill neceſſary to complete this theory. This is what M. DE LA PLACE has undertaken and fully accompliſhed in the preſent memoir.

Mem. II. *New analytical Methods of reſolving different aſtronomical Queſtions.*—XVIIth Memoir. *In which the analytical Formulæ, that have been demonſtrated in the preceding Memoirs, are applied to the Determination of the Moon's Parallax.* By M. DIONIS DU SEJOUR.

Mem. III. *Concerning the Duration of the Solar Year.* By M. DE LA LANDE.

The Academician begins this memoir by proving, that the eſtimation of the ſolar year, as comprehending only three hundred and ſixty days, could not, as ſome imagined, have taken place for any conſiderable time, ſince, as ſoon as men began to compare the riſing and ſetting of the ſun with the ſtars, a few years muſt have diſcovered palpably the groſs error of this eſtimation, and engaged them to conſider the ſolar year as containing 365 days. The addition of ſix hours to this computation is of very recent date, according to M. DE LA LANDE, who does not give it a more remote antiquity than two thouſand years. But this computation is ſtill inaccurate: it was, accordingly, corrected by *Hipparchus*, the firſt aſtronomer who, by a ſure method, ſtill in uſe, determined, with preciſion, the duration of the tropical year; and his computation differs but a little more than ſix minutes from that of our Academician, who makes the ſolar year contain 365 days, 5 hours, 48 minutes, and 48 ſeconds. The obſervations of *Hipparchus*, thoſe of the ſixteenth and ſeventeenth centuries, and thoſe alſo of modern aſtronomers, lead to reſults that come ſo near to this computation, that we may conſider it as nearly accurate, and be perſuaded that it will not ſuffer a ſenſible alteration by any of the equations of the earth's motion.

Mem. IV. *On the Paſſage of Mercury the* 12*th of November* 1782. By M. CASSINI, the Son.—Mem. V. *Obſervation of an Eclipſe of the Sun the* 17*th of October* 1781. By M. MESSIER. —Mem. VI. *Obſervations of the Paſſage of Mercury*, made at Paris, and in other countries, the 12th of November 1782. By many Aſtronomers.—Mem. VII. *Obſervations of two Comets in the Year* 1781. By M. MECHAIN.

Mem. VIII. *A Diſſertation on the Origin of the Zodiac, and the Manner of explaining the* XII *Signs.* By M. LE GENTIL.

M. DUPUIS, profeſſor of rhetoric, in a diſcourſe, of which we formerly gave an account, attributes the invention of the Zodiac to the *Egyptians*. In the preſent memoir, M. LE GENTIL pretends that it belongs to the *Indians*, with whom he has ſpent a conſiderable part of his life. The figures and denominations of the Zodiac have been almoſt generally conſidered as allegories, relative to rural labours and agriculture; but the great queſtion is, to what people do allegories of this kind preferably belong? as the time when theſe allegorical repreſenta-

tions were eſtabliſhed, is unknown, we ſeem to be at full liberty to place the equinoctial points in any ſign we pleaſe, and nothing more is required than to preſerve the order of the conſtellations. Nevertheleſs the *libra*, or balance, is ſuch a natural indication of the equality of day and night, that it ſeems proper to make this ſign correſpond with one of the equinoxes. M. DUPUIS has proved, that if *Libra* be conſidered as the ſign which anſwers to the vernal equinox, the remaining ſigns will be perfectly correſpondent with the labours of agriculture, as they were carried on by the Egyptians: on the other hand, M. LE GENTIL propoſes to ſhew in this memoir that, upon the ſame hypotheſis, they will anſwer equally to the labours of Indian agriculture. So far then, the claim laid to the honour of the invention under conſideration, ſeems equal on both ſides: but our Academician thinks, that the queſtion ought to be decided in favour of the Indians, as, by the nature of their ſoil, they ſeem to have been a more ancient people than the Egyptians: but here hiſtorical proofs are wanting, and plauſible conjectures are all that we can expect upon this dubious ſubject. On both the contending ſuppoſitions, it appears equally, and, in general, highly probable, that the ſigns of the Zodiac are rural allegories, that they were eſtabliſhed at a time when ſymbolic writing was in uſe, and among a people addicted to agriculture, and that this people inhabited a country which was ſubject to periodical inundations, beginning about the time of the ſolſtice. Any people, ſo circumſtanced, may have been the inventors of the Zodiac; and to no other can this invention be attributed with any grounds of probability. That the Indians were inſtructed by the Egyptians, or that the Egyptians were inſtructed by the Indians, are two oppoſite affirmations that are rendered equally probable by the reciprocal communications between Egypt and the countries ſituated on the coaſts of the Indian Ocean. However, in the opinion of the Hiſtorian of the Academy, the foreign origin of the Brahmins, who arrived in India with a ſyſtem of doctrine, and a collection of fables, formed and prepared beforehand, ſeems to give to the ſuppoſition in favour of the Egyptians a degree of probability, which is ſtill increaſed by the unity and conſiſtence obſervable in their ſyſtem.

Prefixed to this volume we have the *eulogies* of eight learned men, Members of the Academy, who all died in the year 1782, and whoſe ages make up the number of 612 years. Sir *John Pringle* is the firſt on the liſt: the others are Meſſieurs *d'Anville*, *Bordenaue*, *Bernoulli* (Daniel), *De Montigni*, *Margraff*, *Du Hamel*, and *Vaucanſon*. The *eulogies*, like all the others drawn by the MARQUIS DE CONDORCET, ſhew the hand of a great maſter in this line of compoſition. They diſplay facility and elegance

elegance of ſtyle, a nice and acute diſcernment of characters and literary merit, and a happy talent at ſhading imperfections and throwing a pleaſing light upon eminent virtues. The eloquence of the noble Secretary is eaſy, mild, chaſte, and abundant; his reflexions, when moſt ingenious, are natural and unaffected. They ſometimes, however, deviate from their uſual and pleaſing ſimplicity; and this happens, when his literary heroes (as is frequently the caſe) exhibit in their characters ſtriking lines of piety and devotion. Theſe lines he indeed places in his portrait; but he draws them with a touch that announces embarraſſment and conſtraint. This latter circumſtance ſtruck us more forcibly in the eulogy of M. *Du Hamel*, and eſpecially in the obſcure and uncouth reflections that follow M. CONDORCET's account of the religious propenſities of that eminent man. Theſe reflexions (which the reader will find at the 152d page of this volume) turn upon the diſtinctive tendency of botanical ſcience to lead an obſerver to the acknowledgment of a *firſt cauſe*, as the vegetable world diſcovers an arrangement and a unity of deſign, which can *leſs* be attributed to the *neceſſary effect* of mechanical cauſes, and is *leſs* productive of *direct* and *inevitable evil* to us, than the *ſyſtem* of *animated beings*. His elucidation of this ſtrange aſſertion is thick darkneſs: at leaſt, if he underſtood himſelf, we underſtand him not. For the reſt—when *obſcurity* comes from the clear head, and the happy pen of this ready writer, we have ſome reaſon to apprehend that it is not the covering of *truth*.

## ART. IV.

*Nouveaux Memoires de l'Academie de Dijon*, &c. i. e. New Memoirs of the Academy of Dijon, relative to the Arts and Sciences, Part II *. of the Year 1784. 8vo. Dijon and Paris. 1785.

Memoir I. *ON the contagious Quality of ſome Kinds of Fluxions on the Breaſt.* By M. MARET. We cannot enumerate all the obſervations, by which this ingenious phyſician has been perſuaded of the real exiſtence of a contagious quality, in certain defluxions of the breaſt. He had long ſuſpected ſuch a quality, from ſeveral circumſtances and appearances that occurred to him, in the courſe of his practice; but he ſuſpended his judgment until repeated and multiplied obſervations had convinced him of the fact. Defluxions of the putrid kind are ſuch as have the unhappy quality of being communicated by a noxious temperature of the atmoſphere, to healthy perſons who attend on patients labouring under this diſorder: but it is only at the period when the criſis is completed, that the infection takes place. Our Author farther obſerves, that the air is not charged with the miaſmata, or noxious particles of this diſorder, or,

* For Part I. ſee Rev. vol. lxxiii. p. 487.

at

at leaſt, does not carry them to any conſiderable diſtance, and that precautions may be uſed, which will be preſervatives againſt the infection. Theſe are, to avoid taking in, directly, the breath of the patients, or ſwallowing our ſpittle, while we are near them, or eating in their apartment. We were much alarmed when we began to read this memoir: but theſe plain and eaſy preſervatives make us again pluck up our ſpirits.

Mem. II. *Concerning a new Method of multiplying foreign Trees.* By M. DURANDE. It is not eaſy to procure ſeed in full maturity from foreign trees tranſplanted among us; and all other means, ſays this Academician, hitherto known and employed for the reproduction of ſome of theſe trees, have proved unſucceſsful. At length a very ſimple one has been contrived, which has been attended with ſucceſs; it conſiſts merely in cutting a root and placing it in a frame in a good hot-bed, where it produces a ſtalk. By this method M. DURANDE has multiplied the Chineſe *acacia*, the bean-tree, the *gleditſia triacanthos*, and the *guilandina diöica*.

Mem. III. *On the Cure of a bilious Cholic complicated with the Sciatica.* By the Same. This cure was performed by a mixture of ether with the ſpirit of turpentine, employed as diſſolvents of biliary ſtones.

Mem. IV. *On the Noſtoch.* By Father VERNISY. The noſtoch is a kind of vegetable ſubſtance, of a greeniſh colour, which trembles at the touch, in the manner of a jelly, but does not melt when held in the hand. It cannot well be called a plant, ſince it has neither roots, veins, nor fibres. It ſeems either to fall on a ſudden from the clouds, or to be the immediate production of the earth, whence ſome have called it the *flower of earth*, others the *flower of heaven*, and the alchymiſts, who are uſed to make *rare work* with things which have an obſcure origin, have ſuppoſed that it contains an univerſal ſpirit, capable of converting other metals into gold. The reverend Author of this memoir, endeavours to illuſtrate the origin and production of this ſubſtance, by the following proceſs of dame Nature: The green ſcum, *ſays he*, which is found in great abundance on the ſurface of ſtagnant waters, is nothing more than a decompoſition of ſeveral aquatic plants, which have been long macerated and reduced to a froth, or a kind of pap. The moſt ſubtile parts of this froth may be carried up into the atmoſphere by the action of the ſolar rays; a part thereof may fall down again with the rain in a watery or liquid ſtate, while the remainder, by its mixture with heterogeneous ſubſtances, may be coagulated in different parts of the clouds, and be formed there into flakes, more or leſs conſiderable in ſize, but ſtill light enough to float for ſome time, till they deſcend with rain under that form of jelly, which ſtill retains both its greeniſh colour and the vegetable ſavour, though ſomewhat altered,

tered, which it had before its aſcent. This is our Author's genealogy of the *Noſtoch!* the *Tremella Noſtoc* of Linnæus!

Mem. V. *On the remarkable Miſt that happened in June and July*, in 1783. By the Secretary of the Academy, M. MARET. Several obſervers were of opinion that this uncommon phenomenon had a phyſical connexion with the earthquakes of *Sicily* and *Calabria*; but our Academician proves the contrary, we think, with full evidence, by a ſeries of comparative experiments which he made at the time with atmoſpherical air charged with the vapours of this miſt, and taken in four different places. It appeared, from theſe experiments, that this miſty air contained no mephitic acid, no acid of any other kind, no diſengaged phlogiſton, and that it ſcarcely differed at all from common atmoſpherical air. Whence then this extraordinary miſt? It owed its origin, ſays our Author, to the moiſture of the earth, which, at the time of its appearance, was covered with a kind of cruſt, extremely dry, from the temperature of the air, which was ſo arid that it ceaſed to be a conductor of the electrical fluid, and from the intenſity of the heat which multiplied the exhalations from the earth. Theſe exhalations, principally compoſed of water and electrical matter, being reſtrained by the aridity of the exterior cruſt in their efforts to riſe into the atmoſphere, were violently divided and attenuated in their aſcent: their aqueous molecules extremely rarified by the heat, combined with a large portion of electrical matter, of which the air, become non-conductor, could not deprive them, formed veſicles, and, growing light, roſe to a certain height above the earth: where they remained ſuſpended, offuſcated the tranſparence of the aerial fluid, and thus produced the miſt in queſtion. Our Academician accounts ingeniouſly, and yet with great ſimplicity, upon optical principles, for the reddiſh colour that covered the diſk of the ſun and of the moon during this miſt.

Mem. VI. *On the Methods employed to deſtroy the* Chryſalis *of Silk-worms.* By M. CHAUSSIER. To deſtroy the chryſalis without hurting the quality of the ſilk, has always been found exceedingly difficult. The vapours of camphor have been lately employed for this purpoſe, and with more ſucceſs than the methods formerly uſed. In the place of theſe, however, as not anſwering the purpoſe completely, our Author ſubſtitutes oil of turpentine, and ſhews how it muſt be employed, in a circumſtantial detail, for which we refer thoſe whom it may concern to the memoir itſelf.

Mem. VII. *Botanical and medical Reflections on the Nature and Properties of the Agaric of Oak.* By M. WILLEMET. The agaric is here conſidered as the ſuperabundance of a vegetable juice that exiſts in the tree, or as a morbid matter which is in a

ſtate

ſtate of depuration; in which caſe it muſt be excluded, as a *fungus*, from the ſexual ſyſtem of plants. Its great efficacy, and the manner in which it acts in the ſtopping of hemorrhages, when it can be applied to the blood veſſels, is alſo celebrated.

Mem. VIII. *Anatomical Eſſay on the Structure and Uſe of the Epiploon.* By M. CHAUSSIER. Some new and curious obſervations are to be found in this memoir.

Mem. IX. *On the following Queſtion: Is Gold really diſſolved in the nitrous Acid?* By M. MORVEAU. This eminent chemiſt, in oppoſition to M. Tillet, who held that the gold is attacked, but not diſſolved, neither wholly nor in part, in the nitrous acid, affirms that a ſmall portion of it is really diſſolved.

Mem. X. *Analyſis of the Water of the Lake of Cherchiaio, near Monte Rotondo in Tuſcany.* By M. MARET. This water, as appears by the reſult of the analyſis, contains acid of borax, ſulphur, clay, a large portion of pure air, and a little lime.

Mem. XI. *Concerning the Ice that aſſumes, at the Surface of the Earth, the Form of Needles or perpendicular Filaments.* By M. RIBOUD. The Academician accounts for this phenomenon by the rarified vapours, or igneous emanations, which carry along with them aqueous vapours, and meet with a ſudden cold as they riſe out of the ground. They are cryſtalized in ſeparate filaments, becauſe they eſcape in filaments through the pores of the earth; and pyramidal needles are obſerved, becauſe it is in this form that the congelation of water commences. Accordingly, M. RIBOUD perceived a number of ſmall holes in the ground; and each of theſe was the baſe of a needle or filament of ice.

Mem. XII. *Concerning the Origin of the Bodies of Ice that are carried down great Rivers in the Times of hard Froſt.* By M. GODART. We have here various obſervations which ſeem to prove that in running waters, congelation does not begin at the bottom, but that the ice is precipitated there, either by the motion or by the weight of the ſand and pebbles or flints, that are carried along with the current. Hence M. GODART concludes, that the icy cruſt is produced at the ſurface of a river, but never at its bottom; that it is the element both of the compact and ſpungy ice; that it forms the compact ice at the ſurface, when the waters are in a ſtate of reſt, and the ſpungy ice at the bottom, in proportion to their weight, and the force of the currents.

Mem. XIII. *Obſervations on a Cataract, accompanied with a Diſſolution of the vitreous Humour.* By M. CHAUSSIER. The intenſe pain ſuffered by the patient in this diſorder determined the operator to extract the cataract: but after having made an inciſion in the cornea, the vitreous humour being as fluid as water, eſcaped almoſt entirely, ſo that the cryſtalline ſunk into

into the eye-ball, and was carried behind the iris. Upon this M. CHAUSSIER ſuſpended his attempt to extract the lens, and only dreſſed the wound. The next day he found the eye-ball reſtored to its plenitude, and the cryſtalline on the borders of the inciſion; ſo that he extracted it with the greateſt facility. This fact has induced the Author to think, that in this operation there may be caſes in which it would be expedient to let ſome time intervene between the inciſion of the cornea, and the extraction of the cryſtalline.

The *meteoro-noſological* hiſtory of the ſix laſt months of the year 1784 terminates this volume.

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## ART. V.

*Recherches Phyſiologiques et Philoſophiques ſur la Senſibilité, ou la Vie animale,* i. e. Phyſiological and Philoſophical Inquiries concerning *Senſibility*, or animal Life. By M. DE SEZE, M. D. Member of the Academy of Sciences at Bourdeaux. 8vo. Paris.

WE have often heard theological doctors (who had corrupted the ſimplicity, and clouded the perſpicuity of religious truth, by mixing with its pure and primitive luſtre, the fallacious lights of ill-employed erudition and metaphyſical theories) wiſely admoniſhed to return to their *bibles*, and to draw thoſe truths that reſtore or confirm the health of the ſoul, from their original and genuine ſources. A ſimilar admonition, with reſpect to the ſcience that has for its object the health of the body, is addreſſed to his medical brethren by the ingenious Author of theſe *Inquiries*. When we read the preliminary diſcourſe that is prefixed to this volume, we think we hear him addreſſing himſelf to the faculty in the following manner. "Sons of Hygeia! in what labyrinths have you involved yourſelves by departing from the ſimplicity of nature and of truth, ſeduced by fallacious analogies, ingenious fancies, ill-judged coalitions of ſciences that have no real relation to each other, the bewitching charms of novelty, and the towering pride of ſyſtem? Come back to Hippocrates—come back to the oracle of Cos—who expoſed, in their true colours and characters, the diſeaſes to which humanity is ſubject, pointed out the irregular motions they produce, and the more or leſs happy efforts employed by nature to repel or cure them. Return to Hippocrates, who, in his immortal works, has told us, not what he had *fancied*, but what he had *ſeen*. Woe unto you, who, ſeduced by the dubious principle of a great modern * (that all the ſciences are but branches proceeding from one common trunk), have ſubjected the *animal* body to the laws that are followed by *inanimate* ſubſtances, and explained its functions by the laws of

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* Boerhaave.

mechanics,

mechanics, chemiſtry, hydraulics, and ſo on. Are ye all mad? Do you think that any man but a poet would look upon the human body as a machine, which has its pumps, levers, pullies, ſuckers? and are ye ſo fooliſh as to think, before you have better proofs, that *life* reſults from the action of fluids on ſolids, and the reaction of ſolids on fluids? How do you prove, my very ingenious but deluded brethren, that the human body is an hydraulic machine? Have you ever perceived, either with your microſcope (which alters the ſenſations that ſight has given us, and at beſt makes us ſee objects through a dubious medium), or with your eagle-eyes, ſenſation, feeling, or ſpontaneous mobility in a mere machine? Are you ſure that there is any one ſyſtem of phyſics whoſe laws extend to all natural bodies; and why may not animated bodies be conſidered as ſubject to the laws of a ſyſtem peculiar to themſelves? *Senſibility*, which is their principle of motion, their firſt ſpring, has no affinity or relation to the moving powers known to us: and will you pretend to compare an active machine poſſeſſed of *ſenſibility* in all its parts, with one that is inactive, inſenſible, and inanimate?"

It is thus that our Author exhorts (what he calls) the *mechanical* phyſicians to return to the ſimplicity of the ancients, whoſe natural ſagacity, together with their acute, patient, and perſevering ſpirit of obſervation, was an equivalent for the brilliant diſcoveries and inventions that have been the boaſt of ſucceeding ages. The Hippocratic doctrine of a principle of *ſenſibility*, which vivifies all the parts of the human body, is, in his opinion, the great baſis of all medical truths. This doctrine, which was obſcured ſomewhat by Galen, *ſuffocated* by the Arabian peripatetics, and Paracelſus, renewed by Van Helmont, and adopted and develloped by Stahl and de Bordeu, our Author endeavours to illuſtrate, and confirm, by a long ſeries of propoſitions, intimately connected with and founded upon facts, more than upon opinions. The work would ſuffer greatly by being abridged. It deſerves a peruſal, whether the doctrine be true or dubious; for it is compoſed with no ſmall degree of ſagacity and erudition.

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## Art. VI.

*Mémoire ſur l'Origine et la Nature de la Matiere animale*, i. e. Concerning the Origin and Nature of *animal* Matter. By M. Bochaute, Member of the Academy of Bruſſels. Paris. 1785.

BY *animal matter* this Author underſtands a ſubſtance chemically compoſed in the elaboratory of nature, palpably obſervable in animals, of which it conſtitutes the main maſs, but very obſcurely perceivable in plants, though it ſeems to be the baſis of their organization. His deſign is to prove, that nature compoſes this ſubſtance only in the vegetable kingdom,

dom, from which it paſſes (either directly or indirectly), completely formed, into animals for their nutrition. This ſubſtance, which is diſtinguiſhable by the ſingular and fœtid odour it emits in combuſtion, is the only natural body that is ſuſceptible of putrid fermentation. It is, in animals, the principal ſubſtance of bones, cartilages, nails, ligaments, tendons, fibres, nerves, membranes, of the blood, the lymph, the white of eggs, of paſte, the cheeſy part of milk, &c. and, in vegetables, it conſtitutes the principal part of the ſeed, the parenchyma of roots, &c. We cannot follow our Author in his analyſis of this animal matter, nor in his accurate account of the order in which its products are exhibited during the analyſis made with fire. We recommend theſe details to the curioſity of the chemical reader, for to us they appear acute, judicious, and inſtructive. This *animal ſubſtance* was firſt diſcovered by the famous Beccari, completely formed in a paſte of wheat-flour, which he had analyſed merely by waſhing it with water. In this ſimple operation he, with the utmoſt eaſe, ſeparated the paſte into two ſubſtances of a very different kind: the one was fine flour *(amidon)*, which was precipitated to the bottom of the water, the other a glutinous elaſtic ſubſtance, which, being dried, was half tranſparent, and not only perfectly reſembled horn, but emitted, when burnt, the ſame fœtid ſmell that horn ſends forth when in combuſtion. Rouelle the younger, as our Author obſerves, ſought for the animal ſubſtance in other vegetables beſide wheat, and he found it in the green juices that are preſſed out of freſh plants, and more eſpecially in the green muddy matter which is ſeparated from the juices by water, in a moderate degree of ebullition. Our Author purſued the experimental analyſis of Rouelle ſtill farther, employed it on a great number of plants, and obtained Beccari's glutinous animal ſubſtance from them all. Theſe experiments, and their reſults, are here exhibited in an ample detail.

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## Art. VII.

*Leçons de l'Hiſtoire, ou Lettres d'un Père à ſon Fil ſur les Faits intereſſans de l'Hiſtoire Univerſelle*, i. e. Letters from a Father to his Son concerning the moſt intereſting Facts and Events of Univerſal Hiſtory. By the Author of the *Comte de Valmont*. Vols. I. & II. 12mo. Paris. 1786.

THE Abbé Gerard is juſtly celebrated for his *Comte de Valmont*, in which agreeable and inſtructive work he diſplayed the truth, excellence, and importance of religion, in a manner equally proper to inform the underſtanding and to touch the heart. Theſe hiſtorical letters give him a new title to the eſteem and gratitude of the Public. They are calculated to render the ſtudy of hiſtory eaſy and agreeable, as well as inſtructive,

ſtructive, to a multitude of readers, who are diſcouraged and diſguſted by voluminous details of unintereſting events and laborious accumulations of arid and heavy erudition. He has ſelected from the hiſtory of the world thoſe facts and events that are moſt worthy of attention, by their certitude and moment, by the conſequences deducible from them, and the uſeful and affecting leſſons which they are adapted to teach. Nor has he neglected the particular circumſtances and facts that tend to throw light on the hiſtory and characters of eminent men; he has even given ſummaries of the doctrine and writings of ſeveral, who have obtained a diſtinguiſhed rank in the annals of philoſophy and uſeful erudition. He has divided his work into epochas. The remarkable events that have happened in all nations, under each epocha, are exhibited together, that the reader, after having peruſed the hiſtory of one nation, may not be obliged to return to the chronological point whence he ſet out, in order to read the hiſtory of another. But though the events of all nations are exhibited in the ſame epocha, they are free from confuſion; they are placed in ſuch a natural order as connects them together, ſo that, amid an agreeable diverſity, there is no diſorder. The ſituation of each people is alſo well aſcertained and indicated in maps, in which the Author has been aſſiſted by the learned M. *Mentelle*, his particular friend, who is one of the moſt eſteemed geographers in France.

The two volumes now before us, of this commendable work, contain fifteen letters and five epochas, which carry the hiſtory down to the year 1209 before the birth of Chriſt.

Before he arrived at this term, he had many rugged ways to paſs, and ſeveral difficulties to encounter. The ambiguous chronology of remote periods, the boaſted origin and antiquity of certain nations, the coſmogony and religious opinions of theſe nations, and the true ſtate of the arts and ſciences in the early ages of cloudy and gigantic renown—all theſe difficulties he has encountered with as much ſucceſs as could be expected, and (what we deem particularly meritorious, becauſe it is rare) he has not laviſhed ample details of uſeleſs, and therefore tireſome erudition, on objects which are not ſuſceptible of illuſtration. He has, nevertheleſs, arranged, with greater art and ſimplicity, the hiſtorical chaos of antiquity, than moſt other writers have done; and few, if any, have drawn more inſtructive and affecting moral leſſons from the manners and characters of the nations whoſe hiſtory he has written.

ART.

## ART. VIII.

*Numa Pompilius*, &c. i. e. Numa Pompilius, ſecond King of Rome. By M. DE FLORIAN, Captain of Dragoons, Gentleman of the Chamber to his S. Highneſs the Duke of Parma, and Member of the Academy of Madrid. 8vo. 418 Pages. Paris. 1786.

THIS work is an humble imitation of the *Adventures of Telemachus*; and if it has real merit in point of correctneſs of ſtyle, purity of ſentiments, elegant ſimplicity in the expreſſion of thoſe ſentiments, and many other good qualities, which render a moral romance inſtructive and entertaining, it is not a little recommended to indulgence (if indulgence were wanted) by the delicate modeſty of its Author. M. DE FLORIAN is afraid, above all things, of being, in the leaſt, ſuſpected of having deſigned to contend with the immortal Author of Telemachus; and he has taken an ingenious method of removing all ſuſpicion of this kind; for in an engraving that faces the title, we ſee *Minerva* upon an altar, holding in her hand a book open, on the upper part of whoſe page is written the word *Telemachus*. On the loweſt ſtep that leads to the altar, a *Genius* is repreſented as proſtrated before the goddeſs and the immortal work of Fenelon, and preſenting a book, not open, on whoſe cover is inſcribed the word *Numa*. All this expreſſes elegantly the modeſty, and at the ſame time the laudable ambition of M. DE FLORIAN; and it is evident, that though he has not, and indeed could not, without great preſumption, have flattered himſelf with the hope of producing another Telemachus, yet he has endeavoured to attain, as nearly as might be, the ſpirit, and to purſue the ſteps, of its illuſtrious Author. He follows Fenelon *(non paſſibus æquis)* with unequal ſteps; yet he walks in the ſame path with dignity, and alſo with applauſe; for the firſt edition of his work was ſold in a few months, and a ſecond is juſt publiſhed in two ſmall volumes, enriched with thirteen plates elegantly engraved.

It may be thought that M. DE FLORIAN lay under diſadvantages, even from the choice of his hero; for though there are reſpectable lines in the character of Numa, and ſignal inſtances of wiſdom, capacity, and public virtue in the courſe of his government; yet his reign does not abound in events ſufficient to furniſh materials for an epic poem. But it is the *education* of Numa, and not his *reign*, that conſtitutes the principal ſubject of the preſent work. The great end our Author has in view, is, to repreſent a *young prince*, ſeduced, for a time, by ambition and *love*, recovering from his deluſion, convinced of his deviations from virtue and true glory, and then eſpouſing a virtuous princeſs, and becoming a wiſe and pacific ſovereign. This plan is well executed; the fable of the *poem* (for ſuch we may call it,

though written in proſe) is well contrived: the incidents are numerous, entertaining, and affecting; and the morality that prevails through the whole work, is pure and elevated.

## ART. IX.

*Deſcription générale de la Chine*, &c. i. e. A general Deſcription of China, containing an Account of the *preſent State* of that Empire: in two Parts. The firſt includes a topographical Deſcription of the Fifteen Provinces into which the Empire is divided, the Deſcription of Tartary, of the Iſlands, and tributary Countries which are under its Juriſdiction, the Number and Situation of its Cities, its Population, the various Productions of its Soil, and the principal Details of its Natural Hiſtory.—The ſecond Part exhibits a Summary of the recent Accounts which have been tranſmitted to Europe of the Government, Religion, Manners and Cuſtoms, Arts and Sciences, of the Chineſe. The whole compiled and digeſted by the Abbé GROSIER. Large 8vo. 798 Pages. Paris. 1786.

THIS title ſufficiently announces the general contents of the work. The details are curious, inſtructive, and entertaining, and form, without doubt, the moſt accurate and complete account that has yet been publiſhed (within ſo moderate a compaſs) of the Chineſe empire.

## ART. X.

*Recherches ſur la Cauſe des Affections Hypocondriaques appellées communement Vapeurs*, &c. i. e. An Inquiry into the Cauſe of the Hypocondriac Complaints, commonly called Vapours. To which is added, a Diary or daily Account of the State of the Body, as it is affected by the Temperature of the Air, and the more or leſs perfect State of Perſpiration. By M. CLAUDE REVILLON, M. D. Member of the Academy of Sciences at Dijon, and Correſpondent of the Royal Society of Medicine at Paris.

THIS ſecond edition of a work publiſhed in 1770 *, may be conſidered as a new work, as the Author has been induced, by new obſervations and experiments, to change, or at leaſt to modify his opinion with reſpect to the cauſe of the diſorder called *vapours*. Formerly he conſidered this diſeaſe as the effect of an irregular or diminiſhed perſpiration. At preſent, he thinks that the electrical fluid which is diffuſed through the atmoſphere, has a ſingular influence on the nervous ſyſtem, and therefore concurs in a great meaſure in developing the ſymptoms of hyſterical and hypochondriac diſorders. His obſervations on this ſubject are worthy of attention, particularly thoſe upon the different winds, which, by augmenting or diminiſhing the electricity of the atmoſphere, and the inſenſible perſpiration of the

* See Rev. vol. lxiii. p. 136.

human

human body, have a conſiderable influence on thoſe who are afflicted with the diſorder in queſtion.

The *diary*, added by the Author to this new edition, which contains the ſtate of *his own* body for above two months, ſhews M. REVILLON's weight at different hours of the day, the quantities of food he took, the quantity of matter he evacuated by ſenſible excretions or inſenſible perſpiration, and the agreeable or diſagreeable ſenſations he felt at different times. The ſtate of the atmoſphere, and the variations of the barometer, are placed in a collateral column with this diary.

## ART. XI.

*Hiſtoire d'Herodote*, &c. i. e. *Herodotus*, tranſlated from the Greek (into French), together with hiſtorical and critical Obſervations and Remarks, an Eſſay on the Chronology of Herodotus, and a Geographical Table. 8vo. 7 Vols. (72 Livres). By M. LARCHER, Member of the Royal Academy of Inſcriptions and Belles Lettres. Paris. 1786.

HERE is one of thoſe tranſlations which muſt be diſtinguiſhed from the multitude. M. LARCHER poſſeſſes all the qualities of a tranſlator and a critic, and the Public will certainly crown with their approbation, this new diſplay of his erudition and critical ſagacity. Some copies of this work have been publiſhed in 4to, on fine paper.

## ART. XII.

*Théatre des Grecs*, i. e. The Grecian Theatre. By F. BRUMOY. A new Edition, enriched with fine Engravings, and augmented by the entire Tranſlation of the Greek Tragedies and Comedies, of which there were only *Extracts* given in all the preceding Editions: accompanied alſo with Compariſons, Obſervations, and critical Remarks. By Meſſrs. DE ROCHEFORT and DU THEIL, Members of the Royal Academy of Inſcriptions and Belles Lettres. Volume I. 8vo. Paris. 1785. Vol. II. 1786.

ANOTHER tranſlation of great merit. Father BRUMOY plucked only ſome of the moſt beautiful *flowers* from the tragic poets of Greece, and gave them to us as noſegays, in his much and juſtly eſteemed work. The editors of this new and augmented edition of that work exhibit to us the whole *garden*, in which, indeed, *weeds and flowers promiſcuous ſhoot*, but which, nevertheleſs, preſents a noble and a beautiful *enſemble*.

To the *three* celebrated diſcourſes on Greek tragedy which Father *Brumoy* had prefixed to his work, M. DE ROCHEFORT, the new editor, has added a *Diſſertation*, in which he deſcribes and developes, with ſolid erudition and good taſte, the genius and ſpirit of the Greeks in reſpect to the drama: and to each piece he ſubjoins a critical examination and valuable notes, founded on the principles laid down in his diſſertation. He has

alſo given us theſe pieces, according to their chronological order, that the reader may perceive the progreſs of the drama among that ingenious people, who have been our inſtructors and guides in all the fine arts; and he has made a judicious choice of the beſt tranſlations of thoſe pieces, of which *Brumoy* had only publiſhed extracts: his own verſions are the beſt in the collection; and we are proud to call him the French MELMOTH.

There are many intereſting points of view in the *Diſſertation* above mentioned. The Author ſhews, among other things, the intimate connexion that the arts in general, and more eſpecially the dramatic art in Greece, had with morality and religion, which form the eſſential baſis of true political ſcience and good government. Hence poetry, painting, and muſic, were employed in all the great religious feſtivals; and tragedy had always a diſtinguiſhed place in the ſolemn feaſts of Bacchus. Tragedy, ſays he, produced remarkable effects of a moral and religious nature, on the minds of the people, and (according to his explication of a difficult and obſcure paſſage of Ariſtotle *) by exciting *terror* and *pity*, purified the mind from the irregularity and exceſs of ſuch *paſſions*, and the dejection and anguiſh they occaſion. We had formerly an opportunity of ſhewing, that this explication of the paſſage in Ariſtotle is unſatisfactory, erroneous, and ſtill more obſcure and forced than the paſſage itſelf †. As the word παθηματα in this paſſage ſignifies *calamities* or *ſufferings*, and not *paſſions*, the meaning of Ariſtotle is evidently this, that, by exhibiting certain *calamities* on the ſtage, tragedy may tend to remove ſuch calamities out of human life, by exciting the pity and terror of the audience at the repreſentation of them. On the whole, this additional diſcourſe does great honour to the erudition, the judgment, and the *heart* of its Author. M. DE ROCHEFORT, through the whole tenor of it, diſplays a very extenſive knowledge of the Grecian drama, in its origin and ſpirit, in all its modifications and improvements; and he ſhews (what renders him ſtill more reſpectable in our eyes) that *ſenſus decori et honeſti*, that innate *taſte*, improved by culture, for moral beauty—for what is honeſt, decent, and virtuous, without which erudition and ſcience are of little conſequence, nay often become pernicious to the true improvement of human nature.

The remainder of this firſt volume contains three tragedies of Æſchylus, tranſlated by M. DU THEIL; accompanied with critical remarks, and a life of the poet, by M. DE ROCHEFORT. The other four tragedies of Æſchylus, and the Ajax of Sophocles, form the contents of the ſecond volume. The *Ajax* comes

* Δι' ἐλέου και φόβου περαίνουσα τῶν τοιούτων παθημάτων καθαρσιν.

† See Monthly Review, vol. lxiv. p. 555, 556.

forth

forth in the tranſlation of M. de Rochefort, who has prefixed to it the *life of the poet*, accompanied with judicious *obſervations* on the difficulties which attend the tranſlation of the Greek poets. It is with regret that we learn, that theſe are the laſt aids which the Grecian Theatre is to expect from the labours of M. DE ROCHEFORT; who, for reaſons unknown, has renounced any further concurrence in this undertaking, and propoſes to publiſh apart *his* tranſlation of *Sophocles*. To loſe ſuch a co-operator, who tranſlated *Homer* with applauſe, and is, at this day, one of the leading men in French literature, muſt be detrimental, if not fatal, to the progreſs and ſucceſsful execution of the work before us.

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## ART. XIII.

*La Science des Canaux Navigables*, &c. i. e. The practical Science of navigable Canals, or the Theory of their Conſtruction, Part I. dedicated to the King. By M. DE FER, Captain of Artillery, correſponding Member of the Royal Academy of Sciences at Turin, of the Academy of Dijon, &c. 2 Vols. 8vo. Illuſtrated with ſeveral Plates. Paris. 1785.

M. De la Lande publiſhed a heavy folio volume on this ſubject in 1779, which met with but feeble marks of approbation, even from thoſe who had in other reſpects the moſt favourable opinion of his abilities. The work here announced, when finiſhed, will conſiſt of eight volumes; and the two, now publiſhed, have met with the beſt reception. Though it is more eſpecially deſigned to indicate practicable and eaſy methods of eſtabliſhing a general interior navigation in France, of altering the *corvées*, and introducing a deſirable œconomy into the execution of all thoſe plans and undertakings that are carried on at the public expence, yet it is of ſuch a nature as may render it uſeful to other nations. Thoſe who have a profeſſional inducement to examine what is offered as an improvement in the branches of internal commerce, induſtry, and agriculture, in the laying out of public roads, and in the promoting internal navigation, will here find views and materials that may deſerve their attention.

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## ART. XIV.

*Eſſai Analytique ſur l'Air pur, et les differentes Eſpeces de l'Air*, i. e. An analytical Eſſay concerning pure Air, and different Kinds of Air. By M. DE LA METHERIE, M. D. 8vo. 474 Pages. Paris. 1785.

THE numerous experiments that have been made, for ſome years paſt, on the different kinds of air, have induced this ingenious philoſopher to bring together the reſults of theſe experiments, and to eſtabliſh, upon all theſe facts and reſults, cer-

tain and general principles. He conſiders fire and pure air as two elementary principles which have a remarkable affinity to each other, and whoſe different combinations form all the aeriform ſubſtances that have been obtained by the operations and experiments of modern chemiſts. The details into which he enters, relative to theſe combinations, and the different kinds of air, or aeriform ſubſtances, that are derived from them, are curious and intereſting: they exhibit ſeveral new facts, and are ſingularly recommendable for the method and preciſion of their arrangement.

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## ART. XV.

*De l'Eſprit du Gouvernement œconomique*, i. e. On the œconomical Spirit of Government. By M. BOESNIER DE L'ORME. 8vo. Paris. 1786.

THOUGH we cannot adopt all the opinions held forth in this work, yet it abounds with ingenious points of view, and contains a variety of obſervations and facts, which a wiſe ſtateſman may turn to his profit, and that of the public. The Author's great object is national felicity, and we believe him ſincere in his zeal for its advancement. To point out its true ſources, he treats ſucceſſively of the right of property, and the origin of ſociety; of agriculture, arts, manufactures, and commerce; of the union of the different operations of induſtry in one great end; of the functions of government; and the advantages that ariſe from the unequal diſtribution of landed property.

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## ART. XVI.

*Voyage en Suiſſe, ou Tableau hiſtorique, civil, politique, et phyſique de la Suiſſe*, i. e. Travels through Switzerland. By M. MAYER. 2 Vols. 8vo. Paris and Amſterdam. 1786. (7 Livres 4 Sols.)

THE motto of this book, if we were to deviſe it, would be, *multum in parvo*, much ſolid matter in a ſmall compaſs. M. MAYER is not one of thoſe ſuperficial travellers who are pleaſantly expoſed in the following compariſon:

*Never by tumbler through the hoops was ſhown*
*Such ſkill in paſſing* ALL, *yet touching* NONE.

Far from it: he bears all the marks of an attentive obſerver, an acute reaſoner, a ſpirited painter of the objects he exhibits; but his political reflections on the Helvetic conſtitution are, undoubtedly, the moſt ſhining parts of his work. He has profited, indeed, conſiderably, by the travels of his predeceſſors, particularly the accurate and judicious Mr. Coxe, and he does not diſdain to make an ample uſe of their labours; but he has added more than the widow's mite to the treaſure of information which we already poſſeſs with reſpect to Switzerland. He has gone over the ground, with their books in his hand, and with ardent curioſity

ofity in his eye. In ſhort he writes away, adding, correcting, and modifying; and exhibits a complete view of Switzerland, as if nobody had deſcribed it before him.

## ART. XVII.

*Leçons elementaires de Mechanique*, i. e. Elementary Lectures on Mechanics. By the Abbé JANTET, Profeſſor of Philoſophy in the College of Dole. 8vo. 454 Pages. With 9 Plates. Paris. 1785.

IN this work, remarkable for the perſpicuity, preciſion, typographical neatneſs, and the extenſive knowledge of mechanics, which it diſplays, the Author ſets out by laying down the elementary principles of the ſcience of mechanics. He deduces from one ſingle propoſition the general laws of the balance: he afterwards points out the center of gravity, the laws of uniform motion, the principal diſcoveries of *Galileo*, and the deſcent of heavy bodies. He explains the theory of central forces, and the application of that theory to motion in conic ſections: he demonſtrates that, by the laws of gravity, the planets can only deſcribe conic ſections: he treats alſo of the motion of the center of gravity, of the percuſſive powers of bodies, and the obſtacles with which bodies in motion may meet.

The principle of *equality of preſſure* (which is proved by all the experiments made upon fluids, though not perhaps ſuſceptible of demonſtration by reaſoning) is a truth whence the whole ſcience of hydroſtatics may be deduced. It is, accordingly, from this principle, that the Abbé JANTET derives the laws of the equilibrium of incompreſſible or elaſtic fluids, ſubjected to the free action of their gravity, and the laws of the equilibrium of fluids with the ſolid bodies, which are immerſed in them. A general view of hydraulics, with ſome of the plaineſt doctrines relative to the motion of fluids in the various directions that are obſervable in water-works, to the percuſſion of fluids and the refraction of the rays of light, which paſs from one medium into another, terminates this uſeful work.

## ART. XVIII.

*Idylles, ou Contes Champêtres*, i. e. Idyls, or Rural Stories. By Mademoiſelle LEVESQUE. 16mo. Paris. 1786.

IF the name of this young lady was not prefixed to her work, we might have conjectured that *Geſner* was her ſire; for the ſoul of *Geſner* ſeems to breathe in her charming poems. The ſweet ſerenity of the rural ſcene, the various beauties which it exhibits, the mild and peaceful virtues of which it is the aſylum, the lovely affections that conſtitute the comfort of domeſtic life, are the ſubjects on which this virgin muſe, in her *ſixteenth year*, pours forth her chaſte, tender, unaffected ſtrains. Theſe ſtrains,

though in proſe, have all the ſoft and affecting melody of paſtoral poetry: they are dedicated to her parents; and what tender and delightful emotions muſt ſuch an offering, from ſuch a hand, have excited in their breaſts *?

The ſubject of the firſt of theſe idyls is, *The dangers of love*, which, though repreſented with a tender *naïveté*, ſeem rather to be painted from fancy than from feeling. The titles of the following idyls are, *Filial Love*—the *Dream*—the *Birth-day*—*Liſis and Alexis*—the *Spring*—the *Midnight Converſation*.

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## ART. XIX.

*Collection univerſelle des Mémoires particuliers relatifs à l'Hiſtoire de France*, i. e. A general Collection of particular Memoirs relative to the Hiſtory of France. 10 Vols. 8vo. Paris.

THIS valuable Collection comes forth ſucceſſively, and exhibits a circumſtantial view of characters, events, and revolutions, accompanied with intereſting notes and obſervations on all the moſt important points of French hiſtory. The tenth volume goes no farther down than to the firſt book of the memoirs of *Philip de Comines*, ſo that a multitude of volumes is yet to be expected.

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## ART. XX.

*Obſervations ſur les Obſtacles qui s'oppoſent aux Progrès de l'Anatomie*, i. e. Obſervations on the Obſtacles that retard the Progreſs of Anatomy. By M. TENON, Regius Profeſſor in the College of *Chirurgerie*, and Member of the Royal Academy of Sciences. 4to. 47 Pages. Paris. 1786.

BUY the book, anatomical Readers! it is ſmall, and cheap; it is judicious, and therefore worthy of a peruſal. It is publiſhed with the approbation of the whole anatomical Faculty, and alſo of the Academy of Sciences; and all this, ſurely, is ſufficient to recommend it.

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## ART. XXI.

*Recherches ſur la Direction du Fluide magnetique*, i. e. Inquiries concerning the Direction of the magnetic Fluid. By M. BRUNO, Maſter of the Ceremonies to MONSIEUR, the King's Brother. 8vo. 206 Pages. With 8 Plates. Paris. 1785.

OUR Author flatters himſelf, that after a long ſeries of experiments made on a variety of natural and artificial loadſtones, he has at length arrived at the knowledge of *all*, or almoſt all, the laws to which the magnetic fluid is ſubjected.

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* The father of this lady is M. LEVESQUE, Author of the Hiſtory of Ruſſia (of which we have given an account), who has been lately promoted to the profeſſorſhip of hiſtory at Berlin.

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This knowledge has led M. BRUNO to form what he calls a new idea, and *new* indeed it is to *us*, and will appear probably ſo to many of our Readers. This idea is, that we are all miſtaken when we ſay or think that the magnetic fluid is emitted from one pole or extremity, and circulates to, and enters the oppoſite one: for our Author's experiments have convinced *him*, on the contrary, that this fluid, or effluvia, precipitates itſelf toward the poles, through all the points of a ſpherical circumference; that it afterward re-unites itſelf at one common center, and that at this center a re-action is produced toward all the points of a ſpherical circumference. He may be in the right or in the wrong for aught we know; for we do not well underſtand him: but we are tempted, by analogy, to apprehend, that he is in the wrong, when we ſee him affirming, in another place, that the inclination of the earth's axis may be explained by the action of the magnetic fluid on our globe.

As to the attraction and repulſion of the magnet, our Author attributes them to the elaſticity and preſſure of the air and the ſurrounding fluids. Theſe impel the iron towards the part where it will find the leaſt reſiſtance; and that part is the ſpace occupied by the magnetic fluid, in which there is a ſmaller quantity of air (or of any other groſſer fluid) than that which acts upon the loadſtone. We ſhould be glad to ſee the experiments that led to ſuch reſults.

## ART. XXII.

*Deſcriptions des Machines electriques à Taffeta*, &c. i. e. A Deſcription of electrical Machines made with Taffeta, with an Account of their Effects, and their various Advantages. By M. ROULAND, Profeſſor of Experimental Philoſophy in the Univerſity of Paris. With Plates. 8vo. Paris.

A GENTLEMAN, ſurprized at the beauty and brilliancy of the electrical pencils and corruſcations which he had produced by rubbing, in the dark, with a cat's ſkin, two large taffeta curtains, conceived the idea of employing ſilk in his electrical machine. M. ROULAND caught the idea, and in a large machine has employed taffeta inſtead of the two plates of glaſs that are uſed in the machine of M. *Van Marum*, of whoſe prodigious effects we lately gave an account *. The conſtruction of this machine, in which there is no glaſs, and which is much leſs expenſive, and leſs liable to accidents, than that of the Dutch philoſopher, has been examined by commiſſioners appointed for that purpoſe by the Royal Academy of Sciences: and their report is, that the machine of M. ROULAND is ingeniouſly conſtructed, and exempt from the accidents to which others

* See Appendix to our 73d volume.

are

are expoſed—that it opens a new field for electrical experiments, and is adapted to produce the greateſt effects. This report, given into the Academy by Count *de Milly*, Meſſieurs *Leroi*, *Briſſon*, and *de la Place*, is every way worthy of the confidence of the Public.

## ART. XXIII.

*Etudes de la Nature*, i. e. The Study of Nature, or rather *Studies* of Nature. By J. HENRY BERNARDIN DE ST. PIERRE. 3 Vols. 12mo. With Plates. Paris. 1785.

THIS is a firſt-rate publication. Its plan is irregular, but moſt extenſive; for it takes in the whole compaſs of nature (that is, what we can ſee or conjecture of it), both in the *phyſical* and *moral* world. It is, in point of originality, one of the moſt remarkable productions we have met with; for, beſide a multitude of new ideas, the old ones acquire an aſpect of novelty in paſſing through this Author's pen, and we do not recollect any writer who has drawn ſo conſtantly from an internal fund of native genius and deep obſervation. Ancient ſyſtems, eſtabliſhed principles, ſage authority, received notions, new diſcoveries, are *nothing to him*, until they have been melted down in his crucible (if we may uſe that expreſſion), and examined in all their conſtituent parts. He attacks, without reſpect of perſons, what he looks upon as erroneous; but his attacks are always conducted with decency, candour, and amenity: he pulls down many new ſyſtems, and revives ſeveral old ones: he ſeems, indeed, to be over-fond of deviating from the beaten track: but he never quits the main path of genuine religion, though he ſeparates from it the ſpirit of fanaticiſm, that gives it an odious aſpect, and the follies of ſuperſtition, which would render it contemptible. His ſtyle is eloquent, animated, and often pictureſque and poetical. He deſerves to be tranſlated—but who ſhall tranſlate him? as we may apply to him the Hiberniciſm in the *bathos*:

None but *himſelf* can be his *parallel*.

## ART. XXIV.

*La Religion défendue contre l'Incredulité du Siecle*, &c. i. e. A Defence of Religion againſt the Attacks of modern Infidelity; containing a Summary of Sacred Hiſtory, and ſome preliminary Reflections, relative to the Deſign of this Work. 12mo. 6 Vols. Paris. 1785.

THOUGH we need not foreign aid to repulſe the adverſaries of religion, it is nevertheleſs an intereſting, and may ſometimes prove a uſeful object of curioſity, to know how a controverſy of ſuch moment is carried on by our neighbours, and particularly in a country, where a bold and pernicious aſſociation of ſophiſts have been long undermining or endeavouring

vouring to undermine the ſacred foundations of religion and morality. We have frequently had occaſion to mention productions of conſiderable merit, which have defended the ſanctuary of truth againſt theſe cruel ſpoilers, whoſe ſect ſeems now verging towards oblivion, though they have deluded many. The preſent work deſerves an eminent place among theſe productions. The ſolid reaſoning, the extenſive erudition, and the ſpirit of moderation which it every where diſplays, render it peculiarly commendable.

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## ART. XXV.

*Commentaires de Céſar, avec des Notes hiſtoriques, critiques, et militaires.* i. e. The Commentaries of Cæſar, enriched with hiſtorical, critical, and military Annotations and Remarks, by Count TURPIN DE CRISSE', Lieutenant General of the King's Armies, and Member of ſeveral Academies. 4to. 3 Vols. Adorned with 43 Plates, a Medallion of Cæſar, and the Portrait of the Author. Paris.

WHO could be more proper to write annotations and remarks on the *Commentaries of Cæſar*, than the learned commentator on the Theory of *Vegetius*, and the Memoirs of *Montecuculi*, whoſe extenſive erudition and lively genius, are accompanied with the experience of ſeventeen campaigns? Accordingly, in this valuable and ſplendid work, he does not explain the text, but the expeditions of the Roman conqueror. He unfolds the motives of his conduct, contemplates him amid the obſtacles he had to ſurmount, deſcribes the characters of his friends and enemies, weighs the great intereſts, and appreciates the objects, which animated at that time the firſt perſonages on the public ſcene; and from theſe important ſources he draws the maxims and leſſons of military inſtruction with a maſterly hand.

Count TURPIN has publiſhed the text of Cæſar as it ſtands in the ſplendid edition of Dr. *Clarke*, and he has employed the French tranſlation of *Wailly*, which he has corrected where he found it neceſſary. The plates that enrich the work will enable the reader to follow Cæſar in his expeditions, marches, encampments, and battles, with the greateſt eaſe; and the nations, cities, and rivers, mentioned by the Roman chief, are placed in alphabetical order at the end of it, with their ancient and modern names. Prefixed to theſe volumes we find a Preface, or *Introductory* Diſcourſe, compoſed with great ſpirit and energy, in which, after deſcribing the extraordinary genius, capacity, and talents of the conqueror of Gaul, Count Turpin maintains with eloquence the honour of the military profeſſion, againſt what he calls the paradoxes of certain philoſophers.

ART.

## Art. XXVI.

*Mémoires d'Agriculture, d'Oeconomie rurale et domeſtique*, &c. i. e. Memoirs of Agriculture, &c. Publiſhed by the Royal Society of Agriculture at Paris, for the Year 1785 (the Summer Quarter). 8vo. Paris. 1786.

THOUGH the labours of this learned Society be more eſpecially calculated for the meridian of France, they are executed on ſuch an extenſive plan, as muſt render them generally uſeful. The ſpirit that animates the enlightened and opulent members of the Society, is generous and patriotic. They come to the ſuccour of the poor peaſant, whoſe wretched ſtate of indigence and oppreſſion deprives him of the means of acquiring the knowledge, and making the experiments, that are neceſſary to the improvement of his farm; and, at the ſame time, their views extend to the advancement of the practical ſcience of agriculture, in all its branches. The firſt thing we meet with in the volume before us, is a compendious hiſtory of the Society; which is followed by an account of their *Deliberations*, from the 21ſt of April to the 11th of Auguſt 1785. Theſe turn on a variety of uſeful objects, among which we find the liſt of *Queſtions*, &c. delivered to the Abbé Mongés, who is one of the circumnavigators on board the frigate commanded by M. de Peyrouſe. In theſe queſtions, they deſire information with reſpect to the methods and inſtruments of agriculture employed by the nations that inhabit the coaſts of the South Sea—to the black colour with which they dye their garments, the vegetables that form their tiſſue, and thoſe of which they make their beautiful mats. They deſire alſo ſets of the mulberry-paper tree, of whoſe bark the greateſt part of the paper in Japan and China is made; and the linſeed of New Zealand, with an account of the beſt manner of introducing into France the culture of that plant. They deſire moreover, to facilitate the importation of other trees and plants that grow in New Holland and New Zealand, the ſtrawberry trees of Chili, and ſome of the uſeful animals of the South Sea iſlands, ſuch as the hogs of thoſe countries, and a kind of dogs, that do not bark, and are excellent food.

Under this article of the *Deliberations* of the Society, we ſhall juſt mention (becauſe we think it may be uſeful) one of the obſervations of M. *Thouin*, member of this Society, of the Academy of Sciences, and chief gardener of the Royal Garden of Exotics. This obſervation relates to the plant rhubarb. 'Rhubarb,' ſays he, 'is already cultivated with ſucceſs in different parts of Great Britain, and in the *environs* of Paris; but it has been hitherto cultivated only on account of its medicinal root, though it might be employed with ſucceſs to other purpoſes. The Tartars make of the ſtalk of this plant a kind of marmalade, which is agreeable to the taſte, very ſalubrious, and mildly

mildly laxative. This conſerve, which is employed as a univerſal remedy for children, is prepared by ſtripping the bark from the ſtems, &c. and boiling the pulp with an equal quantity of ſugar, or the beſt honey. The leaves alſo of the rhubarb plant are employed by the ſame people in their ſoups: as they have an agreeable acidity, ſimilar to different kinds of ſorrel; which, in the botanical ſyſtem, is in the ſame claſs with rhubarb.'

The memoirs contained in this Volume are as follows: Mem. I. *Concerning the chaulage*, &c. (i. e. mixing with the corn a certain quantity of quick-lime and water), *conſidered as a preſervative againſt ſeveral diſeaſes to which corn is ſubject.* By M. Parmentier.—Mem. II. *On the manner of gathering and preſerving the leaves of trees, and giving them to cattle as food.* By the Baron de Servieres.—Mem. III. *On the cauſes of vinous fermentation, and the beſt method of improving the quality of wines.* By the Marquis de Bullion.—Mem. IV. *Concerning the manner of cultivating and employing maize as fodder.* By M. Parmentier.—Mem. V. *Concerning the cultivation of turnips, the different methods of preſerving them, and rendering them proper for the nouriſhment of cattle.* By M. Brouſſonet.—Mem. VI. *On the method of preſerving and managing the plums or prunes of Brignoles.* By M. d'Ardoin, Correſpondent of the Society at Salernes in Provence.—Mem. VII. *On the manner of augmenting the real value* (in commerce) *of blighted corn, and of obtaining from it, bread of a good quality.* By M. Parmentier.—The eighth and concluding memoir contains *Obſervations on various branches of rural œconomy in different diſtricts within the Juriſdiction of Paris.* By Meſſrs. Thouin and Brouſſonet.

Several things in theſe *deliberations*, *memoirs*, and *obſervations*, ſhew that the French have profited by an acquaintance with the writings and labours of Britiſh cultivators; but there are alſo ſeveral things, which ſhew that they are not incapable of returning the favour.

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## Art. XXVII.

*Recherches ſur la Nature et les Effets du Mephitiſme*, &c. i. e. An Inquiry into the Nature and Effects of the mephitic Vapour that ariſes from Neceſſary-houſes. By M. Halle, Member of the Royal Society of Medicine. *Publiſhed by Order of Government.* Paris. 1785.

WE ſhould not have made any near approach to this ſtinking ſubject, were it not perfumed by the concomitant odour of public utility, and its tendency toward the advancement of natural ſcience. He is but a ſhabby philoſopher who is led by the noſe. But without farther reflections, let us come to the point. An *oculiſt* of Lyons, called *Jannin*, pretended to have diſcovered a method

method of deſtroying, by the uſe of vinegar, the mephiticiſm of privies, which have ſometimes ſuffocated the poor workmen employed in emptying them; but, on examining the matter experimentally, the united commiſſioners of the Academies of Sciences and Medicine found, that the diſcovery of our *oculiſt* was merely *viſionary*. M. HALLE', the Author of the *Inquiry* now before us, was one of theſe academical quack-catchers, and after having detected the inſufficiency of the pretended anti-mephitic doctor, he availed himſelf of the experiments that were made upon this occaſion, in order to throw ſome new light upon the nature and effects of *mephitic* vapour.

His *Recherches* are divided into two parts. In the firſt he gives us an hiſtorical account of *anti-mephiticiſm*, in which we learn, among other things, that the experiments of the oculiſt *Jannin*, performed before the commiſſioners, coſt one man his eye-ſight, another his life, made ſeveral others fall into aſphixies, more or leſs complete, and affected very diſagreeably almoſt all the commiſſioners; ſo that, obſerves our Author, the mephiticiſm, inſtead of being deſtroyed, was rather diffuſed by the uſe of vinegar, and all the neighbourhood was infected with the ſtench.

The *ſecond* part of this inquiry is elaborate and curious. M. Hallé conſiders *mephiticiſm* as a property which certain vapours have to act upon animals in ſuch a manner as ſuddenly to ſuſpend the exerciſe of their vital functions: he ſhews that all aeriform fluids, which are unfit for reſpiration, are really mephitic; that the effects of mephitic vapours always bear the characters of ſpaſm or ſtupor, i. e. the marks of a nervous ſyſtem ſtrongly affected, and are not merely confined to the effects of a ſuppreſſed reſpiration. He then conſiders the aeriform fluids that are diſengaged from the larger temples, or ſmaller fanes, where ſecret offerings are made to the filthy goddeſs *Cloacina*; which fluids, according to the experiments of M. Lavoiſier, are calcareous and inflammable gaſes. Some writers ſuppoſe that there may be alſo hepatic and alkaline gaſes in the accumulated maſſes of theſe ſubſtances; but the alkaline gas abſorbed by the water, is rarely, if ever, collected into a maſs, and indicates its exiſtence only by a ſtrong and penetrating ſmell. The ſmells that are produced by the *fœcal* ſubſtances are divided by our Author into five kinds, the excremental, alkaline, hepatic, putrid or nauſeous, and a ſour effluvium ſimilar to that which is emitted from the ſubſtances evacuated in certain diarrhæas. All theſe odours are here deſcribed with the moſt inſtructive and fœtid perſpicuity; and the various effects and ſituations of theſe vapours in privies, cloſe-ſtools, and larger collections of the ſubſtances in queſtion, are accurately enumerated, in conſequence of repeated operations and experiments.

The aſphixies cauſed by *lead*, which our Author, in conſequence of obſervations here related, conſiders as eſſentially different from all thoſe produced by gaſes, are accurately deſcribed, and divided into claſſes, together with the methods hitherto employed as preſervatives againſt theſe calamities. The formation of currents of air, the proper uſe of fire and ventilators, but above all, the uſe of lime either in powder or in milk, which have been repeatedly tried by Meſſrs. *Parmentier*, *Cadet*, and *Laborie*, have not been deſtitute of ſucceſs, though methods ſtill more effectual are at preſent in contemplation. The city of Paris, and other populous French towns, ſeem to be more infeſted with this excremental mephiticiſm than thoſe of other countries, as would appear by the number of memoirs and pamphlets that are publiſhed on this ſubject, and the frequent examples of unfortunate *goldfinders*, who periſh in the exerciſe of their profeſſion. It might be curious, though it would be difficult, to aſcertain the phyſical or conſtitutional cauſes of this phenomenon. This diſcuſſion is too deep for us. From a work, to which the Author refers us *, we ſhould be led to conclude that the French are too prone to throw all kinds of heterogeneous filth into the places deſtined to receive their ſecretions and ſuperfluities; for in the work now mentioned, which is entitled, *Obſervations on Neceſſary-houſes*, the writers obſerve, that a variety of theſe houſes are rendered mephitically dangerous in the higheſt degree, when accumulated fragments of dead bodies, or large quantities of vegetables, plaiſter, or rubbiſh, are imprudently thrown into them. Above all, ſay they, the water of ſoap-leys thrown into privies, hath terrible effects. Upon this occaſion our Author recollects a remarkable fact mentioned by *Boyle*, *Lanciſi*, and *Diemerbroek*, relative to the ſtrong ſeptical action of ſoap in the time of a plague. Diemerbroek relates, that, during the terrible plague at Nimeguen, the ſoap employed in waſhing linen, always excited the infection of that peſtilential diſeaſe in thoſe who handled it; that when he himſelf approached the waſhing-tub, he was ſeized with peculiar impreſſions of anxiety and diſguſt; and that in many houſes, which ſeemed exempt from the contagion, it manifeſted itſelf the moment they began to waſh and ſoap their linen. Theſe facts may be uſeful even to thoſe who, by their cleanlineſs and prudence, ſeem to be the leaſt in need of ſuch admonitions.

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* *Obſervations ſur les foſſes d'aiſance, par Meſſieurs* CADET, PARMENTIER, *et* LABORIE.

ART.

## ART. XXVIII.

*Obſervations générales ſur les Maladies des Climats chauds*, &c. i. e. General Obſervations on Diſeaſes that reign in warm Climates, the Cauſes whence they proceed, the Method of treating them, and the Means of preventing them. By M. D'AZILLE, the King's Phyſician at St. Domingo, and correſpondent Member of the Royal Academy of Medicine. 8vo. Paris. 1785.

THOUGH this ſenſible, learned, and humane phyſician confines his obſervations to the iſland where he reſides; yet he gives many uſeful leſſons in regard to other parts of the world. He paints, in lively colours, the bad management of the French hoſpitals, which is ſo fatal to the health and well-being of the coloniſts, and ſhews how theſe eſtabliſhments ought to be regulated in all countries, in order to anſwer the ſalutary purpoſes for which they are erected. It is alleged as a general defect in the French hoſpitals, at home as well as abroad, that thoſe patients who are in a ſtate of recovery, are not removed to a ſeparate apartment from the ſick and the dying; and that thus, breathing the infected air of the hoſpital, they often relapſe into a ſtate worſe than that in which they were before. The management of the French hoſpitals in the colonies is let out to undertakers, who, to fill their purſes, turn the hoſpitals into charnel-houſes, and are, indeed, *undertakers* in every ſenſe of that word. We do better, it is to be hoped; but let us do better ſtill.

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## ART. XXIX.

*Hiſtoria Politica de los Eſtablicimientos*, &c. i. e. A political Hiſtory of the tranſmarine Settlements of the European Nations. By Odoardo Malo of Lucca. Volumes I. and II. 8vo. Madrid. 1785.

THIS work is recommended to curioſity by the importance and extent of its ſubject, and the high rank and literary merit of its Author *. But as we have not the original at hand, we here communicate to our Readers the account of it that hath appeared in a foreign journal.

In the *introduction*, the noble Author gives his readers a general idea, and a methodical enumeration of the commercial ſettlements and colonies of ancient nations; alſo an account of the ſucceſſive ſtate of theſe nations, from the earlieſt hiſtory to the diſcovery of the Cape of Good Hope, and the iſles and continent of the new world.

It may be almoſt confidently affirmed, that the firſt emigrations were made by land; that a long ſpace of time elapſed before any people were ſo intrepid as to attempt a paſſage over the

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* We have no doubt that this is the work of the Duke d'Almadovar, formerly miniſter from Madrid at the Britiſh court.

waves to diſtant and unknown regions, and that, even when the art of navigation had opened a communication between countries which the ocean had ſeparated, the progreſs of that art, from its firſt diſcovery to the entire eſtabliſhment of the Roman empire, was ſlow and imperfect. The ancients had ſcarcely any knowledge of thoſe extenſive countries that lie to the eaſt of Germany, and ſtill leſs were they acquainted with the vaſt regions that form at preſent the kingdoms of Denmark, Sweden, Pruſſia, Poland, and the Ruſſian empire. In Africa their knowledge was confined to the countries which form the coaſts of the Mediterranean, and to thoſe that are ſituated on the weſtern borders of the Red Sea. In Aſia they knew nothing of the rich and fertile provinces beyond the Ganges; nor do we find that they viſited the vaſt regions of Tartary, formerly occupied by the wandering tribes of Sarmatians and Scythians: nevertheleſs the progreſs that they made in commerce and navigation, poor and ſcanty as their geographical knowledge was, juſtly excites the admiration of our Author. The account of their efforts and diſcoveries, in the *introduction* to this work, is accurate; but Dr. Robertſon left nothing new to be ſaid on that ſubject.

Book I. of the work itſelf, is divided into eight chapters, and contains the firſt maritime trials of the Portugueſe in the Atlantic Ocean, the progreſſive growth of their marine, their arrival in India, China, and Japan, the flouriſhing ſtate of their navigation, and its decline. The principal facts, relative to this branch of hiſtory, are well known; and we have an elegant ſummary of them given by the celebrated writer above mentioned in his introduction to the Hiſtory of America. But our Author's circumſtantial narrative of the Portugueſe voyages is truly intereſting, and exhibits a pleaſing view of the knowledge and talents by which the operations of theſe adventurers were conducted, and of the ſpirit and genius of the royal patrons by whom they were encouraged and protected.

The *ſecond* book, which alſo contains eight chapters, is entirely taken up with Dutch hiſtory; and it is one of the moſt intereſting and inſtructive of the whole work. We can never repreſent to ourſelves a Spaniard writing or reading of the riſe and progreſs of this republic without biting his lips: and yet we ſee here the Duke d'Almadovar relating, with as much impartiality and temper as could be expected from human and national infirmity, the exploits and revolutions of the Dutch, the foundation of their republic, their firſt voyages to the Eaſt, their wars with the Portugueſe, their conqueſts in the iſles and on the continent of Aſia, the eſtabliſhment of their Eaſt India Company, and other objects of Belgic policy and commerce.

The *third* book, with which the *ſecond volume* commences, relates to the commercial ſettlements and conqueſts of the Engliſh in the Eaſt Indies.

In the firſt chapter we have an account of the commerce that was carried on in the Britiſh iſles, from the time of the Phœnicians, Carthaginians, and Gauls. The noble Author paſſes here in review the principal epochas of Engliſh hiſtory, the firſt Britiſh navigators, the eſtabliſhment of the Engliſh Company, and the expedition of Lancaſter, who ſet ſail in the year 1601, and arrived the year following at Achem, a famous port at that time. The ſucceſsful voyage and happy return of this able officer determined the Company to form ſettlements in India. The original nature of theſe ſettlements, which were merely commercial, the ſtate of the Portugueſe and Dutch colonies, who were already in poſſeſſion of ſeveral provinces, fortified towns, and commodious harbours, which gave them ſignal advantages above their new competitors, and the attempts of the Engliſh to obtain a ſimilar footing in India, are largely deſcribed in this chapter. In the following one we find an account of the diſputes to which this rivalſhip gave riſe, as alſo of the league that was formed between the Engliſh and the Perſian monarch *Schach Abbas* to drive the Portugueſe from Ormus, which was taken by the combined forces of the confederates, in the year 1623. The advantages which the Engliſh derived from their new ſettlement in Perſia excited the jealouſy of the Dutch, who frequently rendered their ſituation uneaſy, and would probably have ruined their affairs in that part of the world, had not Cromwell declared war againſt Holland, and thus contributed a good deal to prevent the total decline of the Eaſt India Company.

The privileges and protection granted to the Company in 1657 by this extraordinary man, who reſtored its declining vigour, and rendered it reſpectable in Arabia, Perſia, and India, form a part of the contents of the third chapter. The hiſtory of the Company is here continued; all the changes and revolutions it underwent in the reign of Charles II. the loſſes it ſuffered, the debates occaſioned by the continuation and renewal of its excluſive charter, the erection of a new Company in 1698, and the union of the two in the beginning of the preſent century, are largely treated in the reſt of this chapter.

The *fourth* chapter begins with the war that broke out between the Engliſh and the French in 1744, which is conſidered in regard to the influence it had on the maritime commerce of theſe two nations. We find alſo in this chapter an intereſting deſcription of Arabia, an account of the character and manners of its inhabitants, and of the revolutions that have happened in that country, together with a circumſtantial account of the trade carried on by the Engliſh in that part of the world. In the following chapter we have an ample deſcription of the Perſian Gulph, and of the pearl-fiſhery in the Iſland of Baharem. In treating of this branch of commerce, the Author ob-

ſerves, that theſe pearls, though of a darker hue than thoſe of Ceylon and Japan, are of a larger ſize, and more regular form, and leſs ſubject to the diminution of their luſtre in warm countries.

The Maldive Iſlands, and the coaſt of Malabar, are amply deſcribed in the *ſixth* chapter, with an account of the different ſtates into which this extenſive country is divided, and an accurate enumeration of its various productions.

The *ſeventh* chapter contains a deſcription of Canara, of the Iſlands of Salſete and Bombay, and of the preſent ſtate of Goa, which our Author is pleaſed to call the center of the riches of India, and the greateſt commercial ſettlement *in the world.* The ſtate of the Mahrattas and the revolutions of Surat come alſo under conſideration in this chapter; and the next exhibits a view of the preſent ſtate of the coaſts of Coromandel and Orixa, which are inhabited by nations that differ from each other in their manners and languages. The internal and external commerce, particularly of the Engliſh on theſe coaſts, their important ſettlements, the cotton manufactures, their wars with *Hyder Ali Khan*, and many other intereſting objects of policy and commerce, are amply treated in this chapter.

The ſettlement of the Engliſh at Bencoolen, in the Iſle of Sumatra, is the firſt object of diſcuſſion we meet with in the *ninth* chapter. The Author ſhews how this ſettlement was formed, and what the colony ſuffered from the deſpotiſm and rapacity of the Engliſh agents. The ſettlement that was formed in the Iſle of Balambangan was ruined by the ſame cauſes, after it had coſt its founders about 400,000 pounds. Having given an account of the conqueſt of Bengal by the Engliſh Company, the Author next deſcribes the navigation of that Gulph from the River Ougli and the mouths of the Ganges. He enumerates alſo the productions and manufactures of Bengal, and gives a curious account of the ancient cuſtoms of the inhabitants of Biſnapore, whoſe manners and character are ſaid to be the ſame at this day that they were a thouſand years ago. This is one of the moſt intereſting chapters of the work. In the three following we have a deſcription of the iſlands of St. Helena, Anſovan, &c. with an account of their commerce, and the obſtacles it met with; alſo a circumſtantial relation of the events that have happened at Bengal in theſe later times.

To this work is ſubjoined an *Appendix*, conſiſting of nine articles, in which the noble Author treats of the Britiſh conſtitution, of the two Houſes of Parliament, of Britiſh liberty, of the civil and criminal juriſprudence of Great Britain, of civil and military employments, and other matters relative to the government of this country.

## Art. XXX.

*Hiſtoire de la Societé Royale de Medicine*, &c. i. e. The Hiſtory and Memoirs of the Royal Society of Medicine, for the Years 1780 and 1781 *. 4to. Paris. 1785.

THIS fourth volume ſets out with the *eulogies* of nine learned members of the Society, who were ornaments to their profeſſion by their characters and abilities, *viz.* the Drs. *Fothergill*, *Montigny*, *Du Hamel*, *Pringle*, *Herman*, *Buttet*, *Vetillart du Ribert*, *Hunter*, and *Sanchez*. Theſe are followed by a liſt of the works publiſhed by ſeveral members ſince the year 1779, and an account of the reports and memoirs that have been preſented to the Society ſince the publication of their third volume. Some of theſe reports are highly intereſting, particularly one made by order of government, relative to the nature, ſymptoms, and cure of a *puerperal* fever. This epidemical fever, whoſe ſymptoms are terrible, and which often terminates in the death of the patient at the concluſion of the third or the commencement of the fourth day, manifeſted itſelf at Paris, in ſeveral hoſpitals, and alſo in private houſes, with peculiar and fatal violence of late years. The efforts of medical art had long proved ineffectual for its cure. At length M. Doulcet, one of the phyſicians of the *Hotel Dieu*, hit upon a method of treating it, which was attended with remarkable ſucceſs. In the ſpace of four months near two hundred women were perfectly recovered from this terrible diſorder, while five or ſix patients only, who refuſed the remedy, were victims to its fury, and their own obſtinacy. We cannot enter into the minute and accurate details contained in this memoir relative to the fever in queſtion. We ſhall only obſerve, that in order to treat it, according to the method ſo ſucceſsfully employed by M. Doulcet, the firſt moment of its appearance muſt be carefully obſerved, and then, without delay, 15 grains of ipecacuanha are to be adminiſtered in two ſeparate doſes, at an interval of an hour and a half. The next day the ſame doſes are to be repeated, whether the ſymptoms have ceaſed or ſtill continue. If they continue the third day, the ſame doſes are to be again adminiſtered, and repeated the fourth day in caſe of neceſſity. In the intervals, the effect of the ipecacuanha muſt be ſeconded by a potion, compoſed of oil of ſweet almonds, an ounce of the ſyrop of marſhmallows, and two grains of kermes mineral. The ordinary drink of the patient muſt be linſeed or ſcorzonera tea, edulcorated with ſyrop of marſhmallows. About the ſeventh or eighth day the patient

* For the firſt volume of this inſtitution, with an account of its plan, ſee Rev. vol. lxii. p. 511.—For the third volume, ſee Rev. vol. lxviii. p. 553.

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muſt be gently purged, three or four times, as the caſe may require.

The next object we meet with in the *hiſtorical part* of this volume, is the *meteorological correſpondence* of the Society, accompanied with twenty-ſix large tables, which contain the obſervations of F. COTTE relative to the temperature of the air, the variations of the barometer and thermometer, the heat and cold, the winds and weather, and the reigning diſeaſes in 1780 and 1781. The temperature of the year in 1780 was the ſame with that which was obſerved in the correſpondent years of the lunar period of 19 years, *viz.* 1704, 1723, 1742, and 1761. The weather in 1781 was extremely warm and dry; all the productions of the earth were premature, and crops of every kind were rich and abundant. The ſame temperature and the ſame fecundity were obſerved in 1705, 1724, 1743, and 1762, the years of the lunar period of 19 years, which correſpond to the year 1781. The influence of the ſmaller periods indicated by M. *Toaldo* were not confirmed by the obſervations of Father COTTE.

Of the remaining obſervations that are contained in the hiſtorical claſs, thoſe that relate to *medical practice* are

Obſervations *on an Aperture in the Stomach.* By M. GEOFFROY.—*On a remarkable Alteration in the Colour of the Skin.* By M. DE CHAMSERU. This is an *icterical* diſeaſe, of a new ſpecies, in which the body of a female child, eight years old, was covered with a dark, blackiſh, violet colour, accompanied with other diſagreeable ſymptoms. It was ſuppoſed to proceed from a thick, viſcous, ſuperabundant blood, and a languid circulation. Some accidental circumſtances prevented the phyſician from purſuing the treatment which the diſeaſe ſeemed to require. In a ſimilar caſe, by attenuating the blood and augmenting the action of the fibres, the juice of antiſcorbutic plants gave conſiderable relief to the patient; but we have no account of a complete cure.

*On a* Caries *which was occaſioned* (as appears) *by a ſudden Impreſſion made by a Current of Air on a Perſon who was heated and almoſt exhauſted by hard Labour.* By Meſſrs. VARNIER and LAGUERENE.

*On the Diſſections of two Bodies which exhibited Phenomena totally different from thoſe which the Diſeaſes ſeemed to indicate.* By M. HALLE'. One was a ſchirrous induration of the membranes of the ſtomach; the other, a ſingular alteration of the natural ſtate of the kidneys.

A Series of *Obſervations* made by M. VICQ D'AZYR *on different Kinds of animal Concretions*; and on other Subjects. By the Same.

*On a Man who had a monthly Flux of Blood, which iſſued from the End of the little Finger of his right Hand.* By M. CARRERE. This ſingular flux was always preceded by a head-ach, which

ceaſed when the evacuation was finiſhed. When attempts were made to ſuppreſs this evacuation, the ſuſpenſion occaſioned diſorders in other parts of the body, ſuch as peripneumonies, dyſenteries, and ſpitting of blood, which complaints ceaſed when the evacuation was reſtored *.

The *materia medica* and medical chemiſtry have alſo furniſhed ſeveral articles for the hiſtorical part of the volume before us; ſuch as

*Obſervations and Experiments on the Saliva, or Spittle of Horſes.* By M. H. DE LA CHENAIE, Profeſſor in the Veterinarian School at Paris. The nature of the ſaliva conſidered in general—the chemical and phyſical properties of the *pure* ſaliva of the horſe—the manner in which it is affected by different degrees of heat in open or cloſed veſſels—the action of water and ſaline matters on pure ſaliva—and the examination of the ſaliva taken from the mouth of the horſe, and mixed with the other fluids of that cavity—all theſe points are here treated with brevity, ſkill, and attention.

REPORT of the Memoir compoſed by Dr. *Joſeph Flores*, member of the Univerſity of Guatimala in New Spain, which contains an account of a *Specific lately diſcovered in the Kingdom of Guatimala for the Cure of the Cancer, and ſome other Diſorders frequent in that Country.* This method of cure conſiſts in making the patient eat, during three days or longer, if the virulence and obſtinacy of the cancer require it, a kind of lizard, which is common in the province of Guatimala, and which the inhabitants call *lagartija.* The Indians, as we learn from the Spaniſh memoir †, cut off the head and the tail of this reptile, and having ſeparated from it the entrails and the ſkin, eat it raw, and even with ſome feeble remains of life. This method of employing the remedy being impracticable in Europe, it would, perhaps, be worth the pains of an inventive practitioner to contrive ſuch a preparation of the ſubſtance of this reptile, as might be tranſportable, in pills or boluſſes, into our parts of the world, but to make, previouſly, a trial of the efficacy of ſuch a preparation on a certain number of patients in the province of Guatimala. The Society obtained from Spain, by the good offices of Count de Vergennes, a certain number of the lizards of Guatimala, and alſo of thoſe which are found in Spain, which ſeem to differ little, if at all, from the American lizards. Meſſieurs *D'Aubenton* and *Mauduyt* have been appointed by the

* This is not a new or unknown caſe. See Lowthorp's Abridgment of the Philoſophical Tranſactions, vol. iii. p. 248.—the caſe of Walter Waſh from the finger, and ſimilar periodical evacuations from other parts of the body.

† Publiſhed at Guatimala, and republiſhed at Madrid in 4to in the year 1782.

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Society, to make trial of their reſpective virtues in cancerous and cutaneous diſeaſes, and alſo to comprehend in their experiments the French lizards, which ſeem to differ little from thoſe of Spain. The caſes of perſons cured of the moſt virulent and inveterate cancers by theſe reptiles in the province of Guatimala, are circumſtantially deſcribed by M. CARRERE, the Author of this *report*. They are very remarkable, and render further inquiries into this matter highly deſirable, as they may terminate in diſcoveries of great conſequence to medical ſcience and to humanity. The manner in which this remedy operates ſeems to confirm ſtrongly the accounts which have been given of its efficacy. It promotes evacuations, more eſpecially abundant ſweating, and a conſiderable ſalivation, which diſcharges a thick yellowiſh matter. Where theſe evacuations do not take place, the want of them is compenſated by an ample excretion of acrimonious and fœtid urine, which contributes equally to the relief of the patient.

A LETTER from the Chevalier D'ARBALESTRIER, dated February 14, 1781, mentions the *lobelia ſyphilitica*, a plant which grows in Canada (and which was ſent to him from thence), as a moſt efficacious remedy for the venereal diſeaſe. In his botanical excurſions on the Alps, he found a plant, ſimilar in its appearance to that now mentioned, called *phyteuma*, with a decoction of which he radically cured ſeveral ſoldiers, who were in the moſt advanced ſtage of that abominable diſeaſe. This plant is alſo remarkable for its efficacy in the cure of many chronical diſorders, occaſioned by a vitiated lymph.

*On the deadly Effects of a Muſhroom*, which may be denominated *Agaricus Conicus*. By M. PICCO, correſponding Member at Turin. We have here an account of ſix perſons who were poiſoned by this muſhroom, of which the Author gives a particular deſcription, accompanied with drawings. Four of them died in conſequence of their refuſal of the remedies that were offered: the other two were reſtored to health. The ſymptoms of the diſorder are here circumſtantially deſcribed; the cure is performed by emetics; for vomiting, excited without loſs of time, is, according to our Author, the principal relief againſt the corroſive and ſoporific poiſon of muſhrooms, when followed by the uſe of ſoftening and mucilaginous ſubſtances to correct the impreſſion made on the *primæ viæ*, and prevent inflammation, which, in ſuch caſes, generally terminates in a gangrene.

We find a remarkable poſtſcript annexed to this narration, which is as follows: 'I have received a letter from M. J. Reycends, dated the 29th of laſt Auguſt. He tells me, that he learned from M. ENOCH, ſuperior of the Oratory in the ſeminary of Grenoble, that a family at Ghent, which had been poiſoned by muſhrooms, were cured by an infuſion of pear-tree

leaves, drank as tea, after having ineffectually tried ſeveral other remedies. This reminds me of the great confidence that was placed in the leaves of the wild pear-tree by the ancients, who recommended it to thoſe who had ſuffered by eating muſhrooms.'

*Experiments relative to the Influence of the different Plants and Grains upon the Qualities of the Bread uſed by Peaſants and Farmers* (in France). By the Abbé TESSIER. Though theſe experiments relate to the plants that grow among corn, and ſome kinds of grain that are mixed with it in the barn, in a particular diſtrict (*La Beauce*), yet ſomething analogous to this mixture may be found in other places and other countries; and therefore the experiments may prove more generally uſeful than they ſeem to be, at firſt ſight. The Society has been often conſulted on the epidemics, which have been ſuppoſed to ariſe from theſe heterogeneous mixtures. The grain or plants which, in the diſtrict of *Beauce*, were found among wheat, rye, barley, and oats, were the hare-bell or grape-flowers; the cow-wheat; the darnel; the ray or rye graſs; tares, or vetches; alſo the ſmut or blight, which, though mentioned as a grain, is rather a diſeaſe of the corn. The Abbé TESSIER deſcribes concifely, yet with remarkable perſpicuity and preciſion, theſe plants and their ſeeds. He has mixed their flours with one another in different ways, ſometimes taking each alone, and ſometimes adding to each ſome leaven and the flour of good corn in certain proportions. Theſe experiments have enabled him to indicate the marks which aſcertain the exiſtence and proportion of each grain in the bread of the poorer part of the community, who are fed with the remains of the ſieve, or with what is left on the threſhing-floor, and in the granary, when the beſt part of the corn is ſeparated from it.

The *hiſtorical part* of this volume is terminated by an ample table of the ſpecific weight of ſeveral ſubſtances employed in medical practice, and by obſervations on the number of births, marriages, and deaths at Montpellier during the ſpace of ten years; that is, from 1772 till 1782 incluſive.

## MEMOIRS.

Mem. I. *Concerning the Temperature of the Years* 1780 *and* 1781, *with an Account of the Diſeaſes that reigned at Paris during theſe two Years.* By M. GEOFFROY. We have here a preciſe account of the ſtate of the air, in each ſeaſon, in each month, and its influence in producing diſeaſes, whoſe ſymptoms and treatment are largely deſcribed in this intereſting and inſtructive memoir.

Mem. II. *Concerning Epidemics.* By M. RAIMOND, M. D. In this memoir, remarkably for its ſolidity, preciſion, and perſpicuity, the learned Member diſcuſſes the following important queſtion;

queſtion: *What connexion is there between* epidemical *diſeaſes and other diſorders which happen in the ſame place, and at the ſame time, and are called* intercurrent *and* intervening? *What are the* complications *that take place between them, and what influence ought theſe complications to have on the method of treating them?* This was propoſed by the Society as a prize queſtion, and as the pieces given in did not prove entirely ſatisfactory, the queſtion was propoſed a ſecond time with a double premium, which was obtained by the Author of this memoir. An epidemic dyſentery in the ſouthern provinces of France in the years 1779 and 1780, was the occaſion of this queſtion. In the *firſt part* of this memoir the Author endeavours to aſcertain the connections and relations that ſubſiſt between epidemical and intercurrent diſeaſes, by their evident *occaſional cauſes*, and by their *ſymptoms*. The former are the general properties of the air, which reſult from the nature of the weather, the ſtate of the ſeaſons, and the *conſtitution* of the years, *i. e.* the permanence or continuance of a certain temperature (ſuch as dry heat, humid cold, dry cold, or humid heat), during one or more years. The nature and characters of the latter are enumerated, in an intereſting analyſis of a great variety of epidemical and intercurrent diſeaſes, which (as the Author concludes from this analyſis) are derived from the ſame cauſes. The method of cure, founded in theſe obſervations, is the ſubject of the *ſecond part*.

Mem. III. *A medical Account of the Conſtitution or Temperature of the Year* 1778, *together with a Hiſtory of the epidemic Dyſentery that reigned during the Year* 1779, *in the Town of* Pommeraie ſur Sevre, *in the Lower Poitou.* By M. DURAND. This piece, on the ſame ſubject with the preceding article, met with a favourable reception from the Society.

Mem. IV. *Concerning the Topography of the Town* St. Andeol, *medically conſidered.* By M. MADIER, Correſpondent of the Society. This memoir, though but locally intereſting, may, however, be of more extenſive utility, conſidered as a model worthy the imitation of thoſe who examine the ſituation of places as conducive or detrimental to the health of their inhabitants.

Mem. V. A Diſſertation on the following Queſtion: *Does there really exiſt a miliary Fever, eſſential in its Principle, and diſtinct from other exanthematous Fevers? and if ſo, in what Habit of Body is it moſt to be expected?* By M. AUFAVRE, correſponding Member. In order to proceed methodically in the examination of this queſtion, the Author ſets out by giving a hiſtory of the *miliary fever*, which contains an accurate deſcription of that diſeaſe; he indicates the ſymptoms which precede and accompany it, and points out the different ways in which it terminates. He, afterward, mentions the perſons, conſidered

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with reſpect to their conſtitution and method of living, who are moſt liable to this diſeaſe, and ſhews its remote or prediſpoſing cauſes from meteorological obſervations. Led by theſe previous diſcuſſions and obſervations to the knowledge of the original *ſeat* of the diſorder, and the *matter* that properly conſtitutes it, he maintains, that the former is the *membrana adipoſa* or cellular ſubſtance, and the latter, the *mucus* of that membrane reduced to a ſtate of diſſolution, while the principal diſſolvent of this mucus is a matter emitted by inſenſible perſpiration, which had long been retained in the ſmall cells of the mucous membrane. This hypotheſis is ſupported by clinical obſervations and numerous practical facts. It is alſo by ſuch facts that our Author proves the real exiſtence of an ESSENTIAL *miliary fever*, while he indicates the characteriſtics which diſtinguiſh it from the other exanthematous fevers. Finally, he ſhews, that in its principle it belongs to the catarrh, and that in its commencement and progreſs, it is inflammatory and putrid.

Mem. VI. *Concerning a Preſervative againſt contagious epidemical Diſeaſes.* By M. CARRERE. This is not a new diſcovery, but the revival of an old one, the merit and importance of which are confirmed by new examples, and judicious obſervations. It has often been obſerved in epidemical diſorders, that perſons who had an habitual running or diſcharge, either natural or artificial, were preſerved from the contagion. Our Author was the phyſician of a family in which eleven perſons were ſeized with an epidemical diſeaſe; the father alone, who had an ulcer in his leg, in a ſtate of abundant ſuppuration, eſcaped the infection. A multitude of ſimilar caſes are mentioned in this memoir, on the authority of the moſt reſpectable teſtimonies. Theſe have induced M. CARRERE to recommend, as equally effectual, a draining aperture, formed by a bliſtering plaiſter, a cautery, or a ſeton, which may be more eſpecially neceſſary to thoſe who are obliged to attend or approach the perſons that labour under epidemical diſorders. During a plague in the empire of Morocco, which, in the ſpace of five weeks, carried off 85,000 perſons, a Jew phyſician, who took care of the ſick, and many others, were ſaved from the contagion by the means of cauteries or iſſues.

Mem. VII. *Of Inoculation.* By Dr. GIROD —Mem. VIII. *Concerning ſome Abuſes that have been introduced into the Practice of Inoculation, and the Precautions that are neceſſary in order to render this Operation as ſalutary and advantageous as poſſible.* By M. DE HORNE. We join together theſe two memoirs, though they are ſeparated by intervening ones in the volume before us. In the *firſt*, M. GIROD relates the ſucceſs of his practice in this important branch of his profeſſion. In the ſmall town of Millau in Rouerge, between the 20th of March and the 20th of June,

229 perſons (from the age of 8 months to 19 years) were inoculated without the loſs of one; while, at the ſame time, of 234 perſons, who were attacked by the ſmall-pox in the natural way, 32 died in the diſorder, and ſeveral others fell victims to its fatal conſequences. Among many intereſting obſervations contained in this memoir, we cannot omit the mention of one which does peculiar honour to the candour and frankneſs of our Author. He obſerves, that thoſe who had been inoculated by the common people, without any preparation or medical attendance, went through the diſorder with more ſucceſs than thoſe who were under the care of regular phyſicians. This recals to our remembrance the old proverb—*that too much cookery ſpoils the broth*; but whatever truth and wiſdom there may be in this maxim, we would prefer a ſoup made by a cook before that which came from the hands of an oſtler, *ceteris paribus*.

The abuſes in the practice of inoculation, that are reprobated in the *ſecond* memoir, are, 1*ſt*, the attempts to diminiſh the number of puſtules by the uſe of myſterious remedies to enervate the force of the virus, and by diverting its courſe from the ſkin in order to convey it through the rectum:—2*dly*, A want of attention to the choice of a proper temperature of the air, equally removed from violent heat and intenſe cold.—3*dly*, An indiſcriminate application of this practice to perſons of all ages and conſtitutions.—4*thly*, The uſe of a variolous matter for the inſertion of the ſmall-pox, taken, without diſtinction, from perſons of a ſound or vitiated conſtitution.—5*thly*, The inſertion of too great a quantity of the virus.—6*thly*, The neglect of a judicious preparation of the body, with ſeveral other abuſes, for which we refer the reader to this judicious and inſtructive memoir.

Mem. IX. *Concerning the purgative Remedies that are good for Sheep.* By M. DAUBENTON. This curious memoir is well adapted to correct an error which has hitherto prevailed in the treatment of domeſtic animals. It has been thought ſufficient to proportion the doſes of the remedies, that are employed in the diſorders of the human ſpecies, to the ſize of animals, without examining by proper experiments, whether theſe remedies operate on different kinds of animals in the ſame manner as they do on the human body. Experience and obſervation have convinced M. DAUBENTON that they *do not*; that there is a great diverſity in their effects; and that there are remedies which operate powerfully on men, and, nevertheleſs, produce no ſenſible effect upon animals. This conſideration excited him to undertake a ſeries of experiments in order to aſcertain the effects of ſeveral remedies for ſheep, and more eſpecially purgatives. Theſe are enumerated here, and accompanied with obſervations

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and reflections, which will prove highly inſtructive and uſeful to the proprietors and inſpectors of the fleecy flock.

Mem. X. *Obſervations on the different Methods of adminiſtering Electricity, and the Effects they have produced.* By M. MAUDUYT. This piece, which, on account of its merit and importance, has been publiſhed ſeparately by order of government, is a ſupplement to two memoirs on medical electricity publiſhed in a preceding volume. It is deſigned to exhibit a full and collected view of all the *different methods* of adminiſtering electricity, and *all* the *diſeaſes* to which it has been applied, with more, or leſs, or no, ſucceſs. It contains little new to an Engliſh reader, as it is, for the moſt part, an abridgment, though a very judicious one, of M. CAVALLO's *Eſſay on the Theory and Practice of medical Electricity*, publiſhed in 1780, and of Dr. WILKINSON's Latin diſſertations, publiſhed at Edinburgh in 1783.

Mem. XI. *Reflexions on the Effects of vitriolic Ether and nitrous Ether in the animal Oeconomy.* By M. LAVOISIER. Thoſe who make uſe of ether, either as a calmer, or as a remedy for head-achs ariſing from bad digeſtion, will find uſeful inſtruction in this memoir, with reſpect to its operation, and the method of adminiſtering it.

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## ART. XXXI.

*Della Pittura*, &c. *i. e.* A Memoir concerning Eucauſtic Painting with Wax. By M. J. M. ASTORI, Honorary Member of the Academy of Painting at Venice. 8vo. 1786.

MUCH learned labour has been employed to aſcertain the method uſed by the ancients in their *encauſtic* painting. The various attempts that have been made to recover this method, by Count *Caylus*, Meſſrs. *Bachelier*, *Muntz*, the Chevalier *Lorgna*, the Abbé *Requeno*, and other virtuoſos, are well known. Whether this ancient art has been ſo recovered, as it was formally practiſed, is ſtill doubtful. But methods that come near to *Pliny*'s ambiguous deſcription of it, have been ingeniouſly contrived and carried into execution with remarkable ſucceſs; and M. *Muntz*, among others, has propoſed ſeveral ingenious improvements in the art of encauſtic painting. M. ASTORI comes laſt, though not the leaſt, in this ſeries of improvers and inventors. He obſerves, that the ancients thickened their colours with wax, and this they had the art of keeping conſtantly in a ſtate of fluidity, which no modern attempts, ſays he, have been able to effect without the preſence of fire. His method of producing this permanent fluidity, is ſimilar to that mentioned in our ſixty-fifth volume, p. 95; with which proceſs we were favoured by a gentleman well verſed in the art of painting.

He keeps kali, or ſoda, in maceration, for a conſiderable time, in a quantity of cold water, ſufficient to cover it, ſo that the water may

may become ſaturated with the ſalts of the kali. To prepare the wax, he melts it in a ſmall pot, and, before it boils, he pours upon it the water of the kali, filtrated through grey paper, having previouſly infuſed into the water between 8 and 10 drops of the beſt Spaniſh honey. He agitates this mixture over a fire, until all the ingredients are perfectly diſſolved and blended together. He then puts the wax into a veſſel, where it remains in a ſtate of ſoftneſs, like that of liquid pomatum, and fit for uſe. The liquidity of this mixture may be augmented by diluting it with warm water. After this part of the proceſs is finiſhed, the colours, mixed up with water, are diluted in the water of gum arabic, in a quantity proportioned to that of the wax. The wax-compoſition is alſo diluted apart, and afterward the whole is mixed up together, and blended and incorporated into one liquid body. When mineral colours are employed, the wax muſt conſtitute one half of the mixture, a fourth when lac is uſed, and a third when any other colours are preferred.

Before the colours are drawn upon the canvaſs, it muſt be rubbed over with white-lead, gum arabic, and *water of wax*; this latter is a water, in which wax, prepared in the manner above mentioned, is diſſolved. When the picture is finiſhed, it muſt be waſhed over with the wax water, repeatedly poured along its ſurface; and after being wiped, it is to be placed near a gentle heat, ſufficient only to make the wax emit a little ſmoke; and this warmth will make the colours riſe from the canvaſs with a more vivid luſtre. When the picture is grown cool, it is to be rubbed with a cloth, to render its ſurface ſmooth and ſhining.

Our Author obſerves, that his wax water may be employed as an excellent varniſh to preſerve prints, which are expoſed in frames, from the noxious impreſſions of the air; and he indicates the manner of uſing it for this purpoſe. He alſo thinks that it may be uſefully employed for the preſervation of pictures drawn with oil colours, and alſo of crayons. He has not yet finiſhed all his plans for the improvement of *colouring*, that important branch of the art of painting, which has ſuffered ſo much by the deſtructive influence of time: he is ſtill going on with his experiments, and he has attempted a combination of the oil of poppies with wax. With this mixture he propoſes to finiſh a piece, which, with reſpect to the duration and beauty of its colours, will unite all the advantages of ancient and modern painting.

Such is the account of this work which we have received from one of our foreign correſpondents; the original we have not yet been able to procure. The reader will obſerve a deficiency in the deſcription of the proceſs; though the particular quantity of the honey is mentioned, the proportions of the other ingredients are not ſpecified. We have tried various proportions, but

but have never been able to accompliſh a union of the wax with the other ingredients. By *cauſticating* the alkali we readily obtained a perfect ſolution of the wax; and we ſuſpect that the kali aſhes uſed by our Author had been *newly* burnt, and on that account were in ſome degree cauſtic.

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## ART. XXXII.

*Kongl. Vetenſkaps Academiens Handlinger*, i. e. Memoirs of the Royal Academy of Sciences at Stockholm for the Year 1781.

WE ſhall now proceed to give a more particular account of the principal articles in theſe memoirs, the general contents of which we barely announced in the Appendix to our 70th volume, p. 570.

Mem. I. *Concerning the conſtituent Parts of the Tungſten.* By M. CHARLES WM. SCHEELE. The conſtituent parts of this kind of iron are little known. Cronſtedt calls it *ferrum calciforme, terra quadam incognita intime mixtum.* That on which the experiments here related were made was taken from the mine of *Bitzberg*, and was of a pearl colour.

We cannot circumſtantially relate all the experiments made on this metal by the learned Academician, without going beyond the bounds which a multitude of other articles preſcribe to this. We ſhall therefore content ourſelves with indicating their reſults. M. SCHEELE obſerves, that fire made no remarkable change in the *tungſten*, and that neither glaſs of borax nor boiling water act upon it. The ſolution of it by ſpirit of nitre, when precipitated by alkali of tartar, furniſhes a white precipitate, of an acid kind, which is ſoluble in boiling water, in the proportion, however, of twenty parts of water to one of the precipitate. It gives a red hue to the dye of *lacmus*, and is acid to the taſte.

Several experiments were made to aſcertain the nature of this acid. Being dried and expoſed to flame by a tube, it contracted a browniſh yellow hue, became afterwards brown, finally black, and neither produced ſmoke, nor exhibited any indication of fuſion. Being combined with borax it was changed into a blue glaſs, and, tried with microcoſmic ſalt, into ſea-green glaſs. It loſes gradually this colour when it is preſented to the point of a flame: a ſmall quantity of nitre removes the colour immediately: but it returns when the blue part of the flame is directed to the ore; whence it appears that the colour is revivified by the phlogiſton of the flame. When the acid of *tungſten* has been pulveriſed and brought into ebullition with a ſmall quantity of the ſpirit of ſalt or nitre, the powder becomes yellow, and, with ſpirit of vitriol, contracts a blue colour. When it is diſſolved in water and ſaturated with alkali of tartar, it furniſhes a neutral ſalt in very ſmall cryſtals. When it is combined with volatile alkali and *ſal ammoniac*, it appears under the form of ſmall points

points like thoſe of needles. If this neutral ſalt be diſtilled, the cauſtic volatile alkali riſes, and the acid remains in the retort, in dry powder, coloured with yellow. Combined with white magneſia the acid in queſtion forms an intermediate ſalt, which it is not eaſy to diſſolve in water. It does not change the ſolutions of alum and lime; but it decompoſes the earth, that is known under the denomination of *terra ponderoſa acetata*. The precipitate is not ſoluble in water. It precipitates in a blue colour the *ſtannum ſalitum*, and in a white, the following metallic ſolutions, viz. the *ferrum*, *zincum*, *cuprum*, *vitriolatum*; *argentum*, *mercur: plumbum*, *nitratum*; and *plumbum ſalitum*; but it does not produce any change in the corroſive ſublimate, or in the ſolution of gold.

To aſcertain ſtill farther the peculiar nature of the acid of *tungſten*, our Author obſerves, that when it is calcined in a crucible, it is no longer ſoluble in water; that it has the property of attracting the phlogiſton, as appears from the blue colour which it receives from vitrifying fluxes; that it precipitates, in green, the ſolution of liver of ſulphur, and, in white, the ſolution of phlogiſticated alkali; that it aſſumes a beautiful blue colour when poliſhed iron, zinc, or tin are placed in a ſolution of it by water, and when ſome drops of the ſpirit of ſalt are mixed with this ſolution. Other properties of this acid are here enumerated; but we are obliged to abridge. As the acid of *molybdena*, or black lead, derives a blue colour from the metals now mentioned, ſome may be led by this circumſtance to identify this acid with the acid of *tungſten*. But our Academician proves, by ſeveral facts and experiments, that, notwithſtanding this ſingle point of reſemblance, theſe two acids have many different properties, which diſtinguiſh them palpably from each other.

This memoir is followed by an *Appendix* added to it by the late Sir TORBERN BERGMAN, which contains ſeveral obſervations on the *tungſten*.

Mem. VI. *Experiments on the Elaſticity and Diſtribution of Heat, conſidered with reſpect to the Aſcent and Refrigeration of Vapours in rarefied Air.* By M. J. C. WILCKE. The experiments of Otto Gueric, on the aſcent and ſubſequent deſcent of vapours in the air-pump, is well known. It was thence concluded that air, when rarefied, is no longer capable of ſupporting, and therefore lets fall (as ſpecifically heavier) all thoſe heterogeneous ſubſtances which before were ſuſpended, and, as it were, diſſolved in it. But, while this principle was employed to explain the deſcent of the mercury in the barometer, the falling of rain, and other phenomena of our atmoſphere, the moſt remarkable circumſtances of the experiment of Otto Gueric were by no means explained, ſays our Academician, in a ſatisfactory manner.

manner. Theſe circumſtances are—*that the vapours which deſcend from the air, when rareſied, aſcended previouſly, and were ſpread abroad through the atmoſphere; that the rarefaction of the air occaſioned their aſcent; and that the cauſe of theſe phenomena is the expanſion and diſtribution of heat.* Our Academician, having repeated and diverſified this experiment, found that the reſult was the ſame which preceding philoſophers had derived from it, when he introduced a humid body into the receiver: but when he employed a receiver that was clean, dry, and a little warmed, and a leather done over with wax or tallow—when, at the ſame time, the plate of the machine and the air of the chamber were thoroughly dry, no vapours ever appeared at the firſt motions of the piſton; and when, by exhauſting and then letting in the air at different times, or by any other operation, ſome humid particles were introduced into the receiver, then, vapours were obſerved aſcending in the receiver, and *that* in proportion to the moiſture or dryneſs, the coldneſs or warmth of the air. From theſe experiments our Academician drew the following concluſions; *that it is neceſſary to introduce ſome humid ſubſtance into the recipient, in order to render the vapours which it contains, viſible*; that *theſe vapours riſe, in effect, from humid ſurfaces placed under the recipient*; that *they are expanded in the rareſied air before they redeſcend in the form of clouds and drizzling rain*; and that thus *the aſcent of theſe vapours, and their ſubſequent deſcent, muſt be conſidered as two diſtinct effects, intimately connected with the rarefaction of the air.*

After having diſcuſſed and refuted the explications that have been given of this phenomenon by ſeveral learned men, M. WILCKE relates the experiments *he* made in order to diſcover the cauſe of this aſcent and deſcent of vapours in rarefied air. It is evident, *ſays he*, that heat and cold have ſome particular and immediate affinity with the aſcent of vapours in the air-pump; becauſe the greateſt part of theſe phenomena depend more eſpecially on the degree of abſolute and relative heat, which exiſts in the air, the water, the glaſs, and even the machine, at the time of the experiment. They appear always to greater advantage when the air and the bodies are warm, than during a keen and ſharp cold. It is alſo eaſy to perceive how differently they are affected by a warm or by a cold receiver. The former prevents the free expanſion of the vapours; the latter promotes it. The former remains clear and pure; the latter, as ſoon as the air is introduced, is obſcured on all ſides with vapour and moiſture. Our Academician thinks that hence, without any farther reſearches, it is natural to conclude, that *the paſſage and diſtribution of heat among bodies placed under the recipient and in rareſied air, muſt be conſidered as the true cauſe of the aſcent, the modification, and the deſcent of vapours.* He does not, however, reſt his

his proofs here; for, *says he*, in order to complete my own conviction and that of others, and to unfold more particularly the mechaniſm of theſe effects, I made the following experiments:

1. Two thermometers were nicely conſtructed, exactly correſponding with each other. The one was ſuſpended under a dry receiver: the other was placed near it, but on the outſide of the receiver. After having left them in this poſition for as long a ſpace of time as was ſufficient to make them contract the temperature of the medium, in which they were placed, I pumped out the air, and found, that after the *vacuum* had been produced, the inſide thermometer had fallen two degrees, but that it roſe again when the air was introduced anew. This effect ceaſed when the tube of the thermometer was opened; which proves that it was owing to the expanſion of the ball of the thermometer, and the preſſure of the external air. The temperature of the chamber was afterwards changed, and it was then obſerved that the two thermometers roſe and fell exactly together; and this evinces the equal and correſpondent diſtribution of heat in the external denſe air, and in the internal rarefied air. This takes place as long as the ball of the interior thermometer continues dry; but as ſoon as it contracts the ſmalleſt degree of moiſture, the correſpondence is interrupted, and the variations are remarkable.

2. If the ball of the interior thermometer be immerſed in a veſſel filled with water, and the air be pumped out, it remains at the ſame point during the whole of this operation; but it falls ſeveral degrees the moment that it is taken out of the water, and does not riſe again to its former height till the ball becomes dry, and all the moiſture has evaporated.

3. To preſerve the moiſture the longer, and in a greater abundance about the ball, it was ſurrounded with a piece of fine linen, thoroughly wet; and, as ſoon as the piſton began to work, the liquor fell five or ſix degrees, and ſometimes fourteen, when the *vacuum* was completed; the temperature of the chamber and that of the water being about ten degrees. The thermometer roſe again when the moiſture had evaporated, but did not return to its former height until the ball was entirely dry.

M. Wilcke remarks, that in the preceding experiments the vapours, which ariſe from the veſſel full of water, form a palpable obſtacle to the fall of the thermometer, which always deſcends ſome degrees lower under a dry receiver, where there are no other vapours but thoſe which ariſe from the ball; and the greateſt deſcent takes place when the ball is moiſtened before the thermometer is placed under the receiver.

After having proved, by theſe experiments made with water, that *the rarefaction of the air is favourable to evaporation, and, at the ſame time, to the refrigeration and deſcent of the thermometer*, our

Academician employed liquors of a more volatile nature, and more ſuſceptible of evaporation.—4. The ball of the thermometer, being ſurrounded with a piece of fine linen, was moiſtened with ſpirit of wine, highly rectified, and the conſequence was, that the thermometer fell from the 17th degree above the freezing point to the 8th, and even to the 12th below it: with vitriolic ether it deſcended from the 18th degree above 0 to 18 degrees below it *. By this method of proceeding, water, in a warm chamber, was converted into ice with great facility, by placing it in a glaſs veſſel ſuſpended under the receiver.

5. An equal quantity of ether was put into two tea-cups, one of which was placed under the receiver, and the other without. The ether evaporated much more ſpeedily *in vacuo*, juſt as warm water cools ſooner in *vacuo* than in the open air.

As in the preceding experiments a great quantity of viſible vapours are emitted from the ball of the thermometer, which is ſuſpended in rarefied air, it is evident that theſe vapours ariſe from humid ſurfaces, and carry with them the heat of the bodies of the ſurfaces from which they proceed; and that thus the aſſumption and the paſſage of the heat from the maſs of bodies in rarefied air, muſt be conſidered as the immediate and true cauſe of the eruption and aſcent of the vapours. The following experiments will enable us to form a ſtill clearer idea of the heat itſelf, and of the mechaniſm of its effects in the air-pump.

6. A round plate of poliſhed copper of the ſame diameter with the receiver, and ſupported by a glaſs foot in a horizontal ſituation, was placed under a receiver at about the middle of its height. On working the pump, the receiver was filled with vapours, and when a wax candle and the eye were placed in the level of the plate, it was eaſy to perceive diſtinctly, *when the plate was heated*, that the vapours kept themſelves conſtantly at a certain diſtance from the metal, which was ſurrounded with a clear diaphanous ſpace. Over this the vapours were ſuſpended, fell and vaniſhed without arriving at the ſurface of the plate, which was afterwards found to be as dry and unſullied as it had been before the experiment. On the contrary, *when the plate was colder than the receiver*, no trace of ſuch an atmoſphere was to be ſeen; and the vapours moving in all directions on the cold ſurface of the metal, covered it with a kind of dew.

After the relation of the experiments now mentioned, and of others of a ſimilar kind made for the ſame purpoſe, our Academician offers ſome judicious obſervations on the analogy between theſe phenomena and thoſe of electricity. His concluſion is, that they muſt both be explained by the ſame theory; and he deduces from them the following propoſitions:

* The ſcale of the Swediſh thermometer makes the freezing point 0, and boiling water 100.

*Heat*

*Heat is a moſt ſubtile and expanſible matter, whoſe parts repel each other reciprocally.*

*This matter is alſo moſt powerfully attracted by that of other bodies*: hence the reaſon why it not only penetrates and fills their pores, ſurrounds their ſurfaces, and dilates them by its elaſticity and abundance, but alſo ſeparates, and, under the name of evaporation, carries off with it the ſmalleſt parts of bodies. Of theſe it forms *ſolutions or elaſtic vapours*, whoſe *kind* is determined by the nature of the matter of which theſe bodies are compoſed, and whoſe degree of elaſticity depends upon the quantity of the repulſive heat.

*Different kinds of matter attract the heat with different degrees of force*, according to the nature of each matter. Thus, in the preceding experiments, the heat is attracted the moſt powerfully by the air, leſs by water, ſtill leſs by glaſs, and leaſt of all by the mercury of the thermometer.

*The ſame kind of body or matter receives and retains, according to its different ſtates and modifications, a different quantity of heat.* This we ſee clearly when a ſufficient quantity of heat transforms the bodies into ſolutions or elaſtic vapours, or when they are under the preſſure of an exterior force: in the firſt of theſe two caſes, their parts are ſurrounded with the heat that is neceſſary to ſeparate them from each other, and ſurmount their mutual attraction; in the ſecond, they can neither receive nor retain all the heat, which, in a ſtate of full liberty, would get the better of their attraction. Thus a warm air, when ſtrongly compreſſed, diſcharges, like a ſpunge, the heat which it contains *, but reſumes it when it becomes more free, and can dilate itſelf. In the ſame manner the elaſtic heat expands itſelf in that direction where it finds the leaſt reſiſtance.

Hence it follows, that as ſoon as the quantity and preſſure of the air within the receiver are diminiſhed by the effect of the pump, the equilibrium of the heat is diſturbed, the particles of air which remain in the receiver have more room to acquire and retain, as a kind of atmoſphere, a greater quantity of heat than before. This heat is furniſhed by the ſurrounding bodies, and comes principally from thoſe which have it in exceſs, or which attract and retain it with the leaſt force: by its peculiar elaſticity it directs its courſe towards that quarter where the equilibrium ceaſes, and the reſiſtance is diminiſhed at the ſame time; and, when the nature of the body admits of this, it carries off from it the more ſubtile exterior parts; and, in this ſeparation, theſe parts attract, and are ſurrounded by, a greater portion of heat, which is diſengaged from the body whence they have been ſeparated, and which is conſiderably cooled by

* Boerhaave Elem. Chem. P. II. p. 480.

this evaporation. The body loſes a degree of heat proportional to the force with which the heat is attracted by theſe diſſolved and evaporated particles. Thus, ſubſtances produced by the agency of fire, as ſpirit of wine, and ether, which contain ſuch a quantity of heat, that it is ſcarcely poſſible to keep them in well-cloſed veſſels, carry off, on this account, the more heat in their evaporation, and cool proportionally the bodies from which they have been ſeparated. The mercury, therefore, muſt fall in the thermometer when the moiſture that is collected around the ball is deprived of its heat by the air, the glaſs by the moiſture, and the mercury (which retains the heat the moſt feebly) by the glaſs. In this caſe the mercury, by the loſs of its heat, is diminiſhed in its volume, occupies a ſmaller portion of ſpace, and thus marks the degree of cold.

When theſe ſubtile particles, carried off by the heat, and ſurrounded with their atmoſpheres, meet with a body which has the ſame, or a greater degree of heat, the body is repelled by them to ſome diſtance. But if a refrigerated body wants more heat than it can derive from the ambient air, the vapours are carried towards it, to ſupply its defect by their exceſs, and the air alſo deprived of heat becomes a conductor. Then theſe vapours, loſing their heat and their atmoſpheres, adhere to the ſurface of the body, and appear there in the form of drops; but an exceſs of heat repels them from it, under the form of vapours, towards the parts that are the coldeſt.

The ſame cauſe precipitates the vapours that are raiſed by heat in a rarefied air. This air, becoming more free by its rarefaction, is capable of receiving a greater quantity of abſolute heat, than it had before: beſide, it attracts heat more ſtrongly than water does. Thus it not only promotes the aſcent of vapours from the maſſes which furniſh them, but alſo deprives the aſcending particles of their heat: then theſe particles approach each other, and are brought together in larger drops which deſcend, by their own weight, in forms of ſmall clouds and drizzling rain; and refract the light. But if the matter, which is modified into vapours, attracts the heat with as much, or with more force, than the air does, then the particles of this matter retain the repellent atmoſphere which they have acquired, and form a kind of elaſtic air, which mixes with this atmoſphere, ſubſiſts in it, and augments its quantity and its preſſure. This is evidently the caſe with ether; when a ſmall part of it is mixed with common air by evaporation, an inflammable air is formed by this mixture.

By means of this theory of the elaſticity of heat, and of the difference that there is between the degrees of force with which it is attracted by different bodies, we may, ſays our Academician, eaſily comprehend how (according to the expreſſion of Sir *Iſaac Newton*)

*Newton)* the particles that have emaned from a body meet with a real repulſion when they get beyond the ſphere of attraction of that body, as alſo when one of theſe particles has eſcaped from the ſphere of attraction of another. The ſame theory explains alſo not only all the phenomena that have now been examined, but alſo an infinite number of effects that are produced by heat and fire; eſpecially if, with M. *Scheele*, we admit, that in heat itſelf, as in electricity, there are ſeveral more ſimple ſubſtances whoſe ſeparation or re-union would furniſh probably effects analogous to thoſe which have been now under conſideration. Our Academician therefore looks upon the preceding experiments as a demonſtrative proof of the elaſticity, and of the unequal diſtribution of heat, and theſe two properties, as the cauſe of the aſcent, and of all the other modifications of vapours in the air-pump.

M. *Wilcke*, in the following part of this memoir, applies his theory to the meteors which are obſerved in the atmoſphere of our earth, and from this application of it he deduces the following propoſitions:

Air and fire are, by their elaſticity, and their unequal diſtribution, the true and only cauſe of the aſcent of vapours, and of the meteors which reſult from thence. The firſt ſeparation of the vapours, which are emitted from bodies, is produced by heat, which forms an atmoſphere round each particle of theſe bodies. Their ſubſequent aſcent is cauſed by theſe elaſtic atmoſpheres, which, in an air alſo ſaturated with heat, dilate more freely, and find leſs reſiſtance, or are attracted with more force, by an air more rare in its upper region, leſs compreſſed and impregnated with more relative heat.

It is by the influence of the ſame cauſe that vapours and other bodies are the more refrigerated in proportion as they riſe higher in the atmoſphere, where the heat that accompanies them dilates itſelf with more facility, and where even the air itſelf is the moſt adapted to deprive them of their warmth: ſo that there reigns always in theſe higher regions a greater degree of relative cold than on the earth.

The diminution of the denſity and preſſure of the air, which is indicated by the deſcent of the mercury in the barometer, produces the reunion of the vapours in the form of rain, not merely by their fall, which is the effect of their own gravity, but more eſpecially by impelling them downwards by the influence of heat, which, to reunite itſelf to the air, eſcapes from the particles which it has raiſed, and thus gives them a tendency to run together, or to conglomerate themſelves into falling drops. This, an obſerver may perceive clearly when the barometer deſcends, and when a clear and ſerene ſky is covered with clouds, from whence the vapours fall in rain. Thus the tenour and motions of the

barometer have a more intimate connection with the ſtate of heat (which is here the true cauſe), and with the variations of the atmoſphere, than with the aqueous vapours, which are no more than an acceſſory effect, and do not act as an efficient and primitive cauſe. A more exact knowledge of nature, and of the mechaniſm of heat, will furniſh, ſome time or other, a more accurate and complete explicatien of theſe phenomena.

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## ART. XXXIII.

*Entretiens d'un jeune Prince avec ſon Gouverneur.* Dialogues between a young Prince and his Governor. Publiſhed by Mr. G— L—, Member of ſeveral Academies. 8vo. 4 Vols. London. (Paris.) 1785.

WE know not who is the Author of theſe dialogues, but he ſeems to be one of thoſe ſpeculative writers that conſider mankind, not as they really are, but as they would have them to be: and, as in theſe Utopian performances, the prince and the ſubject are equally the creatures of his own imagination, he can mould them as he pleaſes, and raiſe a ſyſtem of government, which, though it may appear very plauſible on paper, it would be extremely difficult, if not impoſſible, to reduce to practice.

He has divided his work into three parts, to which he has given the titles of *Natural*, *Social*, and *Political Inſtitution*.

The firſt part, to uſe the words of the Author, 'conſiders the exigencies of man, and the means of ſupplying them.' It treats of the manner of conducting the education of his pupil, of exciting his curioſity, of inſtructing him in phyſical and moral truth, and in the firſt principles of the ſocial union.

The ſecond part treats of man as a member of ſociety, and explains the various ſpecies of property. Theſe take up the firſt and ſecond volumes, and are by far the beſt part of the work; they contain many judicious, though not new obſervations. The Author affects to be profound, but is ſo rather in his ſtyle than in his reaſoning; and he aſſumes an appearance of originality, from the peculiar turn of his expreſſion, rather than from the novelty of his ideas. As an inſtance of this, he inculcates the neceſſity of benevolent inſtitutions under the ſtrange title of *diſburſement of the patrimony of beneficence*.

The third part, which fills the two remaining volumes, treats of inſtitution. Theſe volumes are calculated merely for an abſolute monarchy: for though the Author profeſſes to have written, and the Editor to have publiſhed, a book for the inſtruction, not only of France, but of princes and ſubjects of every nation, we apprehend it will tend but little to the edification of thoſe who live under governments that are founded on a regard to the rights of mankind, and the liberty of the ſubject.

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Such will be apt to conſider the Author's foundation as falſe, and his ſuperſtructure as viſionary and romantic.

He aſſerts that an abſolute monarchy is the only government which is agreeable to the order of nature. To the republican form he is an inveterate enemy; and of the Engliſh conſtitution his opinion may be collected from the following expreſſions: 'There are nations where aſſemblies of the nobility and people deliberate and vote upon public affairs. To ſuch we may give the name of mixt government, or any other appellation we pleaſe: but it is not a monarchy; it is not a government conſiſtent with nature; it is not calculated for duration.' With reſpect to the two firſt points, it is not worth our while to diſpute them with the Author; and with regard to the laſt, we truſt the event will prove him an ignoramus.

Yet, with all his averſion to free conſtitutions, he cannot be totally blind to the advantages of liberty: he diſplays, in the moſt forcible terms, the miſery and ill conſequences ariſing from the ſervitude of the peaſants; and aſſerts, that the freedom and ſecurity of the huſbandman is the baſis of national power. He obſerves, that if France, notwithſtanding its oppreſſive ſyſtem and wretched adminiſtration of finance, together with all its other political vices, be able to undertake and carry on great deſigns; it is becauſe, in ſome of its larger provinces, the fertility of the ſoil, and the nature of the markets, enable the inhabitants to carry on and improve the cultivation of their lands to a very high degree; by which immenſe revenues accrue to government. The powerful exertions that Great Britain is enabled to make amidſt all its diſadvantages, which he paints in very ſtrong, and, we hope, in exaggerating colours, he aſcribes to the protection and encouragement afforded to agriculture, and to the ſecurity of the farmer in the poſſeſſion of his property, and the produce of his labours.

In juſtice to our Author, we muſt acknowledge that, though his principles are inimical to the natural rights of mankind, he is a zealous advocate in the cauſe of cultivated humanity. He endeavours to inſpire his pupil with an inviolable regard to the obligations of morality, and the ſentiments of benevolence, with an utter averſion to every ſpecies of oppreſſion, and a conſtant attention to promote the happineſs of his ſubjects, eſpecially of thoſe in the lower claſſes. Though it may be improbable that the plans he has ſuggeſted ſhould be carried into execution, their benevolent tendency admits of no diſpute. A prince of the amiable character here delineated would doubtleſs exert his power to render his people happy; but how few ſuch does hiſtory commemorate; and, if we are to judge of the future by the experience of the paſt, how few ſuch monarchs are to be expected! Beſide, when we reflect that the intelligence of the

wiſeſt is confined within very narrow limits, and the influence even of the moſt powerful circumſcribed within a ſmall ſphere; how many inſtances of oppreſſion, committed by thoſe who act under the ſanction of regal authority, may eſcape the knowledge, or elude the juſtice of the beſt and moſt abſolute monarchs! This, in effect, our Author acknowledges, when he obſerves, that a king has power enough to do good, but not ſufficient to prevent wrong being done in his name. This conceſſion evidently ſhews that the liberty of the ſubject requires ſome ſecurity more effectual and permanent, than the benevolent diſpoſition of the prince.

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## ART. XXXIV.

*Verhandelingen van de Natuur en Geneeſkundige Correſpondentie Societeit in de Vereenigde Nederlanden, opgericht in 's Hage.* Tranſactions of a phyſical and medical Society of Correſpondents in the United Provinces, eſtabliſhed at the Hague. Vol. II. & III. 8vo. Hague. 1785 & 1786.

EACH volume of this work is divided into two parts, the former containing meteorological, and the other medical obſervations, made in various parts of the United Provinces. The firſt part contains alſo ſome curious remarks concerning the influence of the moon with reſpect to the weather, and a compariſon of it in the ſeveral months of the years 1780 and 178 , with the correſponding lunations of two Chaldean periods, *viz.* in 1744 and 1745, and in 1762 and 1763, and alſo with thoſe of two metonic cycles in 1742 and 1743, and in 1761 and 1762. The coincidence of the weather with that in the correſponding lunations of the ſaros was much greater than in thoſe of the metonic cycle, and though attended with ſeveral deviations, was, upon the whole, very remarkable. The Society have alſo brought Mr. Sennebier's and Profeſſor Toaldo's prognoſtics to the teſt, and have found them generally confirmed by the event.

The ſecond part of each volume contains what may be termed medical annals, conſiſting of accounts, drawn up by phyſicians or ſurgeons of the different places, of the diſeaſes which occurred during the years 1780 and 1781 in the ſeveral cities and diſtricts of the United Provinces, and of ſuch local circumſtances and cuſtoms of each as may be either advantageous or prejudicial to the health of the inhabitants. This plan might be rendered more elegant as well as uſeful, if the materials were properly digeſted by an able hand. For though ſome of the accounts are drawn up with judgment and preciſion, many of them are exceſſively prolix, and ſwelled with trifling and unimportant details. The caſes are generally ſuch as are common in low marſhy ſituations, and the treatment of many of them ſuch as

is,

is, alas! but too common in that country. We here find ſeveral inſtances of the patient's falling a victim to the indiſcriminate uſe of the lancet, in nervous and putrid diſorders; particularly in a malignant and putrid ſore throat, which was epidemic at St. Maarten's dyk; in which the diagnoſis was ſo evident, and the ill effects of veneſection ſo apparent in the firſt patient, that we cannot but be aſtoniſhed at the phyſician and ſurgeon, who could perſiſt in bleeding the two next patients, with reſpect to whom the conſequences were equally fatal.

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## Art. XXXV.

*Poeſie di Oſſian Figlio de Fingal,* &c. The Poems of Oſſian, Son of Fingal, an ancient Celtic Bard, lately diſcovered, and tranſlated into Engliſh Proſe by James Macpherſon, and from that turned into Italian Verſe by the Abbé Melchior Ceſarotti, with various Annotations by the two Tranſlators. 3 Vols. 12mo. Nice.

WHILE many of the literati in England were diſputing about the authenticity of the poems uſually aſcribed to Oſſian the ſon of Fingal, and racking their invention to diſcover arguments by which their antiquity might be denied, and by hypercritical niceties concerning the dreſs in which they were offered to the Public, were endeavouring to ſhew that they poſſeſſed a much ſmaller ſhare of poetical merit than the vulgar Public, as they affected to call the bulk of the people, were willing to allow them, our neighbours on the continent, without entering into ſuch nice diſtinctions, received them as poetical morſels of ineſtimable value; ſo that they were quickly tranſlated into the German and Italian languages, and were received by the Public with little leſs ardour than if theſe tranſlations had been themſelves original poems of the higheſt merit. The work we now review is the *third* edition of this tranſlation, and was publiſhed as early as the year 1780, though it has by an accident that too frequently occurs with regard to foreign books, eſcaped our notice till this time.

The Italian tranſlator, a man of taſte and good talents, as appears by his notes, conſiders the authenticity of theſe poems as ſo indiſputable, that he never deigns to offer an argument in proof of it, but ſuppoſes it undeniable. And without becoming the profeſſed panegyriſt of his Author, like Pope, Dacier, and others, he takes frequent occaſion to point out peculiar beauties as he goes along, which will give much pleaſure to the admirers of the Celtic bard. Nor is this praiſe indiſcriminate, for he embraces every opportunity of pointing out the blemiſhes he obſerves, though he thinks that the firſt far overbalance the laſt. He does not run a profeſſed parallel between Homer and Oſſian; but he takes frequent occaſion in his notes to compare them, and he often gives the palm to the latter. Our ſpirited

critic

critic ſeems to be aware of the offence that this may give to certain claſſes of readers, and endeavours to obviate their objections by the following remarks in his preface, which we give in his own words, as a ſpecimen of that freedom of thought and boldneſs of expreſſion that general characteriſe his obſervations.

' M' è noto che le mie oſſervazioni non andarono molto a grado di quella claſſe d'uomini che vorrebbe ſtabilire un' idolatria letteraria, e ch' eſſi affettarono di crederle prodotte da quella diſpozioni di ſpirito, da cui mi glorio d' eſſere maggiormente lontano. Siccome non v'è nulla di piu commune quanto l'alterar i colori delle coſe, e attribuir a quelli che diſſentano da noi quelle opinioni che poſſono mettergli in odioſità preſſo il maggior numero, coſi credo neceſſario di ſpiegar con preciſione e candore i miéi ſentimenti a quelli, da cui ſolo puo eſſer prezzo dell' opera il farſi entendere. Queſti non ſono nè i malevoli che non ſi diſarmano a verun patto, nè quei peſanti eruditi, a cui una ſtupida ammirazione tien luogo di guſto, e l'autorita di ragione: ſono i giovani chiamati dalla natura allo ſtudio delle lettere, ma che non hanno ancor formato abaſtanza il loro giudizio, ſono i ragionatori che fondarono le loro opinioni, qualunque ſieno, non ſulla prevenzione, ma ſu i principi; ſono finalmente anche certe perſone aſſenate, moderate, e candide, ma che non ſembrano conoſcere abaſtanza in che differiſcano tra loro una liberta nobile e una condannabile temerita. A tutti queſti io dichiaro, ch'io non ho mai preteſo di levare ad OMERO la jiuſta reputazione che gli e dovuta, come a *primo pittor delle memorie antiche*; come ad inventos fra noi, e padre della poeſia epica; come finalmente a quello il di cui genio diverſamente modificato inſpirò poſcia tutti quelli che ſi diſtinſero in queſta glorioſa carriera; ch'io non ho mai niegato ch' egli non ſia un poeta grande ed ammirabile per molti capi; ch'egli non abbia regolarità di condotta, richezza d'expreſſione, varieta di caratteri, armonia imitativa di numero, pieghevolezza di ſtile, grandiſſima naturalezza animata ſpeſſo da molta ſublimità. Ma ho niegato ciò non pertante, e niego tuttora, ch'egli perciò debba riſguardarſi come il *Pontefice* della poeſia; ch' egli ſolo abbia il privelegio dell' infallibilita, e debba eſſere adorato piutoſto che guidicato; che le ſue virtù ſiano incommenſurabilmente ſuperiori a quelle degli altri; ch' egli debba in ogni ſua parte conſiderarſi come modello; che o non ſi trovino deffetti, nelle ſue opere o queſte non ſieno che picciole macchie che ſi eccliſſano nella ſua luce, che finalmente egli ſia tante maravigliofo, e perfetto quanto avrebbe potuto eſſerlo in mezzo alle ſue circonſtanze.—Dall' altro canto, io conoſco tutto ciò che puo ragionevolmente apporſi al mio originale; conoſco che mancano ad OSSIAN quaſi tutti quei pregi che naſcono dalla ſquizitezza dell' arte, e dalla perfezione della ſocietà, ch' egli ha ſpeſſo dell' uniforme, del cupo, del' faticante,

dell'

dell' ineſatto, e talora anche dello ſtrano e dell' ímprobabile: ma ſoſtengo che i ſuoi difetti ſono aſſai più ſcarſi di quel che poteva aſpettarſi dalla ſua età, e che ſono ſuperati di gran lunga da molte ſue proprie, ſingolari, e ſorprendenti virtù; ch' egli ha non ſolo tutte quelle che poteva dare il ſuo ſeculo, ſpinte ad un grado eminente, ma che egli, ſolo fra gli antichi, ne poſſiede inoltre alcune altre che potrebbero far onore ai poeti dei ſceoli piu raffinaté. *Dati i coſtumi, le opinioni, le circonſtanze dei tempi, trarne il miglior uſo poſſibile per dilettare, iſtruire, e muovere con un linguaggio armonico e pittoreſco:* ecco il problemo che un poeta ſi accinge a ſciogliere colla ſua opera; ed io oſai credere, forſe a torto, ma non gia temerariamente, che Oſſian per piu d'un capo l' abbia ſciolto più felicimente d'Omero. Del reſtò non beſogna mai ſbagliare il punto di viſta ſotto cui dee reguardarſi un poeta, ne collocarle in una claſſe non ſua. Non dee ricercarſí da Oſſian la elegante aggiuſtezza di Virgilio, ne la nobile, e conveniente elevatezza del Taſſo, *ne la viſte ſuperiorí, l'intereſſe generale, la poeſia della ragione ornato di tutti gl' incanti dello ſtile che riſplendono nel grande autor dell' Enriade.* Oſſian e il genio della natura ſelvaggia: i ſuoí poemi ſomigliano ai boſchi ſacri degli antiche ſuoi Celti: Spirano orrore, ma viſi ſente ad ogni paſſo la divintà che vi abita.'

The reader will no doubt ſmile at the exaggerated compliments paid to Taſſo and Voltaire in this ſhort extract; but allowance muſt be made for the national partiality of an *Italian* critic for Taſſo: and the reader will recollect that this paſſage was written during the period of Voltaire's deification, when men of letters on the continent ſeemed to vie with each other who ſhould draw the longeſt bow in compliment to him. This is the only apology we can make for a writer whoſe thoughts are, in other reſpects, manly, and in general juſt. Taſſo has without diſpute painted *one* character in the moſt delicate and bewitching ſtyle, and coloured it with the freſheſt tint of nature; but unleſs it were for the character of *Armida* alone, we ſhould not have known that ever the ſoul of Taſſo had been able to penetrate into the myſterious mazes of the human heart.

From the above extract, and the general ſtrain of all his criticiſms, it appears that the Abbé Ceſarotti criticiſes Macpherſon's tranſlation of the poems of Oſſian as if they were the original works of the Celtic bard himſelf, and it is to this tranſlation only that his criticiſms can apply. But who is now to learn that a poem ſtript of its original dreſs is loſt; loſt, as an object of taſte, and only preſerved as to the facts and ſentiments it contains? Without attempting to tranſlate Milton's Paradiſe Loſt into another language, let any one try to turn it into Engliſh proſe, or Engliſh rhyme, and he will then perceive the force of our obſervation. All thoſe beautiful inflexions of

ſtyle,

ſtyle, thoſe happy expreſſions which convey an irreſiſtible and indefinable charm, would there be loſt; and though the baſis of the thought ſhould ſtill be retained, yet, inſtead of dwelling upon each favourite paſſage with enthuſiaſtic rapture, the man of taſte would then wonder why he ſhould have been ſo much delighted. This muſt be the caſe with every poem tranſlated into another language; but if we give credit to the Engliſh tranſlator, the works of Oſſian muſt have ſuffered more than any other poem of the epic ſtrain that ever has been publiſhed, becauſe in the original they admit a variety of numbers that never has been admitted into any other poem of the epic kind. Shall then Oſſian, thus ſtript of his moſt glorious attire, be ſtill able to ſtand a compariſon with the firſt poets in every age in their higheſt perfection?—'Shall the Britiſh eagle,' in the emphatic language of his tranſlator, 'which the flame of night met in the deſert, and ſpoil'd of half his wings,' ſhall he even in this enfeebled ſtate be judged worthy to be compared with others in their higheſt ſtate of perfection? What then would be the reſult of the trial, had he too been brought forward with equal advantage? But to drop the figure—If Oſſian is to be compared with Homer, Virgil, Taſſo, or Voltaire, let not the proſe tranſlation of his works be compared with theſe ſeveral poems in the original; let it be compared with any tranſlation of theſe that has been made. This juſtice requires, if we wiſh to draw a parallel at all: but this our tranſlator does not attempt. He ventures boldly to compare the tranſlation with the original works. How poor is Taſſo in his beſt tranſlation, when compared with the Engliſh Oſſian; and what a comparatively unintereſting character is even Armida when drawn in the coarſe daubings of thoſe who could not comprehend the meaning of the exquiſitely delicate touches of their great maſter? And lives there a man who would dare to put in competition with the Henriade any tranſlation of it that ever was attempted?

The Italian tranſlation, which may be ſaid to be but the ſhadow of a ſhade, muſt be ſtill farther removed from the original work than the Engliſh Oſſian;—but it has been received with high applauſe. In one reſpect the readers of that work have an advantage over the readers of the Engliſh Oſſian, the Italian tranſlator having prefixed a general account of the Celtic mythology; the underſtanding of which renders many paſſages clear, which were obſcure to Engliſh readers who never had thought on that ſubject. What a confuſed and unintelligible maſs would the Iliad of Homer, and the Æneid of Virgil appear to a reader who never had heard the leaſt account of the Grecian mythology?

Ceſarotti has endeavoured to imitate Oſſian by varying the meaſure of his verſes, having introduced ſeveral lyric pieces where Mr. Macpherſon had indicated that it was ſo in the original: but

but our tranſlator, though in the general narrative he is nervous, perſpicuous, conciſe, and more happily renders the original he copied than we could have expected, yet in his lyric pieces we do not think he has equally ſucceeded. In theſe we neither find that enchanting felicity of expreſſion in varied rhymes which ſo peculiarly delight every claſs of readers in the lyric pieces of Metaſtaſio, nor that ſedate majeſty, and harmonious flow of unrhyming cadences, which ſo happily characterize the Paſtor Fido of Guarini. Ceſarotti's *talents* ſeem to be better adapted to the majeſtic movements of heroic verſe than to the lighter elegancies of lyric compoſition.

As a ſpecimen of the execution of this work we ſhall ſelect a few paſſages; chiefly ſuch as have been taken notice of for ſome peculiar excellencies, as theſe will be more readily recollected by Engliſh readers without obliging them to turn to the book itſelf.

The following addreſs of Cuchullin is toward the end of the firſt book of Fingal:

' Dolce è la voce tua, Carill, e dolce
Storia narraſti: ella ſomiglia a freſca
Di Primavera placidetta pioggia
Quando ſorride il ſole, e volan leve
Nuovole ſottiliſſime lucenti.
Deh, tocca l'arpa e fammi uder le lodi
Dell' amor mio, del ſolitario raggio
Dell' oſcura Dunſgaglia *; ah tocca l'arpa,
Canta Bragella; io la laſcia ſoletta
Nell' iſola Nebbioſa. Il tuo 'bel capo
Stendi tu, Cara, dal nativa ſcoglio,
Per diſcoprir di Cucullin la nave?
Ah che lungi date ratiemmi o Cara,
L'invidio mari quante fiate, e quante
Per le miei vele prenderai la ſpuma
Del mar canuto, e ti dorrai deluſa!
Riterati, amor mio, notte s'avanza,
El freddo vento nel tuo crin ſoſpira.
Va nelle ſale de' conviti miei
A ricovrarti, e alle paſſate gioje
Volgi il penſier; che a me tornar non lice,
Se pria non ceſſa il torbine di guerra.
*Ma tu fido Conal,* parlami d'arme
Parla di pugne, e fa m'eſca di mente;
Che troppe è dolce la veggoza figlia
Del *buon* Sorglan, l'amabile Bragella
Dal bianco ſin, dalle corvine chiome.'

This paſſage is in general as well rendered as a poetical tranſlation readily admits of: and Ceſarotti has been more than uſually happy in the ſimile towards the beginning, ' ella ſomiglia, &c.' But perhaps the moſt natural, if not beautiful paſſage of the

* Dunſcaich, nome del palagio di Cucullino.

whole

whole in Macpherſon, 'O Connal, ſpeak of wars and arms, and ſend her from my mind, for lovely with her raven hair is the white-boſom'd daughter of Sorglan,' loſes much of its beauty by that tame introduction 'ma tu fido Conal.' And the epithet *buon* Sorglan is by no means pleaſing here, nor authoriſed by the original.

The beautiful addreſs to the moon, in the beginning of the poem called Darthula, is thus tranſlated:

'Figlia del ciel, ſei bella, e di tua faccia
Dolce il ſilenzio; amabile ti moſtri,
E in oriente i tuoi cerulei paſſi
Seguon le ſtelle; al tuo coſpetto, o luna
Si rallegran le nubi, e'l ſeno oſcuro
Riveſton liete di rifleſſa luce.
Chi tí pareggia, o della notte figlia
Laſſu nel cielo? in faccia tua le ſtelle
Hanno di ſe vergogna, e ad altra parte
Volgono i verdi ſcintellanti ſguardi.
Ma dimmi, o bella luce, ove l'aſcondi
Laſciando il corſo tuo, quando ſvaniſce
La tua candida faccia? hai tu, com' io,
I tuoi palagi, o ad abitar ten vai
Nell' ombra del dolor? cadder dal cielo
Le tue ſorelle? O pia non ſon coloro
Che nella notte s'allegran tuo?
Si, ſi luce leggiadra, eſſe ſon ſpenti
E tu ſpeſſo per piagnerli l'aſcondi.
Ma verrà notte ancor, che tu, tu ſteſſa
Cadrai per ſempre, e laſcierai nel cielo
Il tuo azzurro ſentier; ſuperbé allora
Sorgeran gli aſtri, e in rimerarti avranno
Gioja coſe, com' avean prima vergogna.'

A poet who had had a ſtronger bias for lyric compoſition would have thrown this addreſs into that form, eſpecially as Macpherſon ſays the original is ſo. This paſſage, we think, affords no favourable ſpecimen of the tranſlation. The following addreſs to the ſun is more happily executed:

'Sento il Sole, o Malvina; al mio ripoſo
Laſciami; forſe quelle amabili ombre
Scenderan ne' miei ſogni; Udir già parmi
Una debole voce: il Solar raggio
Gode di Sfavillare in ſu la tomba
Del garzon di Barcluta; io ſento il ſuo
Dolce calor che ſi diffonde intorno.
O TU che luminoſo erri e rotondo
Come lo ſcudo de' miei padri, O SOLE,
Donde ſono i tuoi raggi? é da che fonte
Trai, l'eterna tua luce? Eſci tu fuora,
In tua bellezza maeſtoſa, e gli aſtri
Fuggon dal cielo: al tuo apparir la Luna
Nell' onda Occidental ratto s' aſconde

Pallida

Pallida e fredda: tu pel ciel deſerto
Solo ti movi. E chi porla ſeguirti
Nel corſo tuo? Crollan le quercie annoſe
Dalle montagne, le montagne iſteſſe
Scheman co gli anni, l'Ocean s' abbaſſa,
E ſorge alternamente; in ciel ſi perde
La bianca Luna: ma tu ſol tu ſei
Sempre lo ſteſſo, e ti rallegri altero
Nello ſplendor d' interminabil corſo.
Tu, quando il mondo atra tempeſta imbruna
Quando il tuono rimbomba, e vola il lampo,
Tu nella tua beltà guarde ſereno
Fuor delle nubi, e alla tempeſta ridi.
Ma indarno Oſſian tu guardi: ei piu non mira
I tuoi vividi raggi, o che ſorgendo
Con la tua chioma gialleggiante inondi
Le nubi orientali, o mezzo aſcoſo
Tremoli d'occidente in ſu le porte.
Ma tu forſe, chi ſa? ſei pur com' io
Sol per un tempo, ed avran fine, o Sole,
Anchi i tuoi di: tu dormerai già ſpento
Nelle tue nubi ſenza udir la voce
Del mattin che ti chiama. O dunque eſulta
Nella tua forza giovanile; oſcura
Ed ingrata è l'età, ſimile a fioco
Raggio di luna, allor che ſplende incerto
Tra ſparſe nubi, e che la nebbia ſiede
Su la collina; aura del Nord gelata
Soffia per la pianura, e trema a mezzo
Del ſuo viaggio il peregrin ſmarrito.'

Theſe paſſages ſufficiently prove that a tranſlated poem muſt be in all caſes conſidered as a work altogether different from the original, when viewed as an object of taſte. There is not indeed a phyſical impoſſibility of this ſecond work excelling the original, but experience ſufficiently proves that the probability is at leaſt a thouſand to one that it ſhall be worſe. And good reaſons might be given why it ſhould be ſo. But be it better, or be it worſe, it ſtill is a *different* work: and therefore no juſt criticiſm on the Author can be founded on any tranſlation whatever.

An— n. All the rest by M—.e.

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## ART. XXXVI.

*Hiſtoire Litteraire de Geneve*, &c. i. e. The literary Hiſtory of Geneva. By the Rev. M. JOHN SENNEBIER. 3 Vols. 8vo. Geneva. 1786.

AN ardent ſpirit of patriotiſm ſeems to have engaged the learned and ingenious M. SENNEBIER to undertake the work here announced; but this alone would not recommend it to the peruſal of readers, who, by their birth and ſituation, are little

little intereſted in the glory of Geneva, if the materials of which it is compoſed were not worthy the attention of men of letters in all nations. Such, indeed, many of theſe materials are; but they occupy leſs than a third part of the work before us, and might, perhaps, be compriſed in even a ſmaller compaſs. In this literary hiſtory a multitude of writers are mentioned, who, by their birth, reſidence, or other circumſtances, were connected with Geneva; but of theſe a very great number have produced nothing in the line of literature and ſcience that was adapted to redeem them from total oblivion. They have been drawn forth, for a moment, to the light by the gracious hand of M. SENNEBIER; but no ſooner do we ſhut his book, than they ſink perpendicularly into

*The ſilent cell*
*Where great King Arthur and his nobles dwell.*

Do not conclude from this too haſtily, reader, that M. SENNEBIER's book is not worth peruſing; if you do, you miſtake the matter. In the firſt volume we, at leaſt, have read with pleaſure, and even with ſome profit, an *Eſſay on the utility which the inhabitants of a country may derive from the knowledge of its literary hiſtory.* This eſſay is judicious, elegant, and breathes the true ſpirit of practical philoſophy. As much may be ſaid for the ſecond eſſay on the *Influence of letters on religion, commerce, arts, and manners, eſpecially in Geneva.* This, however, is but a ſmall part of the praiſe due to the Author of this publication, as it will really, we think, in many reſpects prove entertaining to the ſcholar, and the true philoſopher, and inſtructive to thoſe who are in a lower claſs.

The whole work is divided into four books. In the firſt, our Author carries down the literary hiſtory of Geneva from its origin to the concluſion of the ſixteenth century. Its origin is dated at the introduction of Chriſtianity among the Geneveſe, about the middle of the fourth century. We have here a brief account of the biſhops who governed the church of Geneva in ancient times, in which there is nothing remarkable but the hiſtory of *John de Brogny*, who, from the ſuperintendence of a *hog's-ſtye*, was raiſed, by rapid ſteps, to a diſtinguiſhed place in the *conclave*, and might have eaſily ſeated himſelf in the papal chair, had it been the object of his ambition. He was learned and a good man; and he kept himſelf *clean* both in his firſt profeſſion and in his laſt preferment. This book is terminated by an account of that extraordinary man HENRY *Cornelius Agrippa*, whoſe immenſe learning, acute penetration, voluminous writings, accumulated misfortunes, and capricious character, rendered him a ſtriking example of the *vanity of the ſciences*, (which he ſo well deſcribed), with reſpect to true contentment and happineſs.

In

In the ſecond book, the Author brings down his hiſtory from the concluſion of the fifteenth century to the epoch of the Reformation. The ſixteenth century, which exhibits a perpetual conflict between learning and ignorance, genius and ſtupidity, religion and ſuperſtition, liberty and deſpotiſm, is, undoubtedly, one of the moſt intereſting periods in the hiſtory of the human mind. No era has been more diſtinguiſhed by learned men, eminent ſtateſmen, ambitious princes, able generals, arrogant Popes, uſeful diſcoveries, ſalutary changes and improvements, and alſo by odious abominations of intolerance and perſecution. The ſpirit of reformation, that made ſuch a remarkable progreſs during this period, contributed greatly to the improvement of ſeveral branches of erudition, more eſpecially of ſacred criticiſm; and as Geneva was often the ſcene of conteſt between the Romaniſts and thoſe who came forth, with boldneſs and capacity, to correct their errors and ſuperſtitions, our Author gives an intereſting account of the eminent men that appeared at this time in the field of polemics. The principal of theſe were *Bonnivard*, *Farel*, *Viret*, and *Bernard*.

*John Calvin* is drawn at full length in the third book, with his virtues and his faults, in his public miniſtry and his private life; and never have we ſeen judgment, candour, impartiality, and careful inquiry, more eminently diſplayed in any piece of biographical painting, than they are here, in the hiſtorical portrait of this eminent man. Since the French philoſophers are perpetually calling up, and beſpattering and mutilating, the ſhade of this reformer, in order to place it in odious contraſt with that of Voltaire, we think M. SENNEBIER entirely juſtified in the extent he has given to this article, in his literary hiſtory of Geneva. In this third book, which carries down the hiſtory to the year 1605, we find alſo a very intereſting account of *Theodore Beza*, of *Henry* and *Robert Stephens*, and other eminent and learned men. Theſe accounts are introduced by preliminary obſervations on the cauſes and circumſtances that rendered the ſixteenth century ſo remarkable for the improvement then made in theological ſcience and ancient literature. In inveſtigating theſe cauſes M. SENNEBIER does not forget to chaſtiſe the raſh and faſtidious petulance of certain modern ſophiſts, who treat theſe branches of knowledge with contempt, in order to exalt, by a kind of ſacrifice, the ſcience of phyſics, i. e. of matter and motion, to the firſt place in the ſphere of human knowledge. He maintains, that ſuch *literati* as thoſe of the ſixteenth century, contributed eſſentially to the improvement of philoſophy and the arts; and as he himſelf is acknowledged to poſſeſs a high rank among the natural philoſophers of the preſent age, his ſuffrage, in this matter, is undoubtedly reſpectable. The erudition, *ſays he*, of the *Stephens's*, the *Caſaubons*, &c. always was, and always

will be conſidered as the primitive and the only ſource of true and ſolid knowledge, by thoſe who are capable of underſtanding it. Theſe great men, and their eminent followers, prepared the way for the progreſs made, even in the preſent times, in all the branches of ſcience; and how did they thus prepare the way? By the method of reaſoning they introduced; by the number of ideas they added to the former ſtock; by the incidental queſtions (incidental, our Author means, to mere philology) they were obliged to diſcuſs, by an accurate determination of the ſenſe of words, which ſhortens ſo remarkably the road to truth (for if *things* were originally the *way* to *words*, the latter, in proceſs of time, became the way to things), by the curioſity they excited, and by the taſte they formed in unfolding the beauties of the ancients. In the revival of letters, during the period now under conſideration, the gradation of light was conformable to, what has always been, the procedure of the human mind, which begins by obſerving facts and forming ideas; thence proceeds to expreſs, relate, and embelliſh them, and comes, at length, to combine and compare them, and to conſider them in all their relations and reſults. Thus the philologiſts (we would willingly give a denomination more claſſical to the literati of the ſixteenth century) formed, as it were, the dawn of arts and ſciences: the poets, painters, ſculptors, and architects, appeared together; the hiſtorians followed: the philoſophers came laſt, and, joining the literati, they embraced every branch of knowledge, and added to the general maſs what it ſtill wanted both with reſpect to ſolidity and extent.

Theology, as our Author obſerves, acted a very conſiderable part in this revolution of the ſciences, and contributed not a little to their improvement. Claſſical literature ſpread more and more its benign influence; the ancient authors of Greece and Rome were firſt read with avidity, and then with reflection; and the ſpirit of examination and analyſis was introduced into all branches of ſtudy. Religion was ſtudied with this ſpirit; and it was ſoon perceived how greatly the doctrines which were univerſally inculcated as the doctrines of Chriſtianity, differed from thoſe which are taught in the Goſpel. The cauſes of this difference were inveſtigated; and, in the *ſtubble* that covered and diſguiſed the *pure gold* of the ſanctuary, the hand of man was eaſily diſtinguiſhed from the work of God. But to aſcertain this diſtinction, and to ſhew that Chriſtianity had no part in the fetters which ſpiritual tyranny had forged for conſcience, nor in the reveries that ſuperſtition and fanaticiſm had ſubſtituted in the place of true religion, it was neceſſary to ſtudy the ſacred writings in the original languages, and to conſider theology in its eſſential relations to the happineſs of man, the order of ſociety, and the moral plan of the divine government. Theology, comprehending

prehending thus the maſter ſcience of morals, and the improvement and felicity of intelligent and reaſonable beings, became a principal and important branch in the tree of knowledge; nay, as it preſents to our meditation, the Deity, the human ſoul, and the univerſe, it may even be conſidered as the very body of the tree, to which all the branches belong, whence they derive their nouriſhment, and to which they owe their chief merit and their beſt fruits.

Indeed, if human ſcience does not terminate in the object of true and rational theology (which object is the *permanent* happineſs of human nature), it loſes its crown, or at leaſt an eſſential part of its value and luſtre. If ſome of its theories, in ſuch a caſe, may be productive of advantages to the preſent ſtate of ſociety, which, to each individual, is ſhort and tranſitory, the greateſt number of theſe theories are *much ado about* little or *nothing*, the amuſements of barren truth, or food to the vanity of ſhort-lived philoſophical dwarfs, who are permitted to look, for a moment, into the immenſe labyrinth of ſcience; and what more? to bewilder themſelves and expire. But theology, which conſiders the philoſopher as an infant, who will come to manhood in a future ſeaſon, gives ſolidity to every inquiry, and renders every effort and diſcovery intereſting, as ſteps to a full and durable enjoyment of truth, and of truth united with happineſs, by HIM, who is the ſource of both. But, beſide theſe conſiderations of a higher order, which deſerve the attention of many who affect to deſpiſe erudition, and will ſcarcely allow *theology a place* among the ſciences, M. SENNEBIER ſhews, that erudition and theology have greatly contributed to the introduction of thoſe branches of knowledge, that have rendered the preſent century ſo illuſtrious.

The continuation of this third book in the ſecond volume, exhibits to us, among many of the *obſcurorum virorum*, ſeveral ſhining literary characters, ſuch as the *Scaligers*, *Michael Varo*, *Goulart*, *Diodati*, the *Caſaubons*, and the *Le Clercs*, *d'Aubigné*, *Meſtrezat*, with many more, who had but ſuperficial and tranſitory connections with Geneva, but whom our Author is ambitious of drawing into its vortex. *Michael Varo*, the ſecond in this liſt, deſerves particular notice, as, though little known, he was really the predeceſſor of *Galileo*, *Kepler*, and *Newton*, in opening the path to true philoſophy. He was ſecretary of ſtate to the republic of Geneva, in 1573, and author of ſeveral works on ſome ſubjects of mathematics and natural philoſophy, the titles of which are mentioned in the preface to his Latin *Treatiſe concerning motion*, publiſhed in quarto, at Geneva, in 1584. This treatiſe is ſcarcely known. Our Author never ſaw it quoted; and he does not believe that it is any where extant but in the public library of Geneva, and in that of M.

*Fallabert*, member of the council of that city. M. SENNEBIER has extracted from that curious work, ſome paſſages relative to *attraction* and *gravitation*, which, had the work been known to the three illuſtrious men above mentioned, might have been ſuppoſed (ſays he) to have more or leſs contributed to their ſublime inveſtigations and diſcoveries. Our Author communicated to M. *Bailli* an account of *Michael Varo*'s work, of which that eminent writer has made honourable mention, in the ſecond volume of his *Hiſtory* of modern aſtronomy.

One of the articles that we read with the greateſt pleaſure in this volume, is that of *John le Clerc*, who ſhould never be ſuffered to ſink into oblivion. M. SENNEBIER diſplays both the ſoundneſs of his judgment, and the excellence of his heart, in doing juſtice to the memory of this highly eminent and worthy man. *Le Clerc* was a wiſe and moderate theologiſt, an ingenious and learned critic, an acute and able philoſopher, a faithful hiſtorian; and as a literary journaliſt, he never had a ſuperior, nor perhaps an equal, in erudition, accuracy, impartiality, and candour.

In the third and laſt volume we have an account of many authors *ſtill alive*, or *lately deceaſed*, whoſe characters and writings do great honour to Geneva, the place of their birth.

Of thoſe who are ſtill living, the moſt eminent are Profeſſor *Vernet*, one of the moſt judicious, learned, and rational divines of the preſent age; whoſe labours in eſtabliſhing the truth of Chriſtianity on ſolid foundations, and in exhibiting the doctrines and precepts of the Goſpel in their beautiful ſimplicity, deſerve the higheſt commendation: Mr. *Charles Bonnet*, univerſally known and admired on the continent as a metaphyſical writer of the firſt merit and ſagacity, and an acute philoſophical and religious obſerver of the works of nature, which he deſcribes with uncommon accuracy and eloquence. His works have been lately publiſhed in nine volumes quarto, and in eighteen volumes 8vo: Meſſrs. *De Luc*, both eminent in the line of natural knowledge, and one of them particularly celebrated for his *Theory of the barometer and thermometer*, *his hiſtory of the earth and of man*, and ſeveral ingenious memoirs that have appeared in the Philoſophical Tranſactions: M *de Sauſſure*, profeſſor of philoſophy, whoſe numerous writings have been received with applauſe by the connoiſſeurs in natural hiſtory, and to whom the Public is indebted for a portable hygrometer and electrometer. To theſe may be added Meſſieurs *Le Sage*, *Bertrand*, *John Trembley*, *Pictet*, with many more of high reputation in the various walks of ſcience, whoſe names form a long and reſpectable liſt, which would ſwell this article beyond the proper bounds. It is a juſt object of admiration, that a city, whoſe population does not amount to above 24,000 inhabitants, ſhould exhibit ſuch a number of emi-

nent men, among whom M. SENNEBIER, the Author of this work, deſerves a very diſtinguiſhed rank, on account of his extenſive knowledge in various branches of literature and ſcience.

If we go, with our Author, ſome years backward, we find another ſhining liſt of literary and philoſophical worthies; ſuch as *Abauzit*, *Burlamaqui*, *Butini*, *Calandrini*, *Cramer*, *Jallabert*, *Turretini*, *Romilli*, and many more, whoſe merits and labours are appreciated by our Author, in a very judicious and intereſting manner. As to the article of *J. J. Rouſſeau*, we are free to ſay, that it did not quite anſwer our expectations. The portrait here drawn of this ſtrange man, ſo ſublime in genius, and ſo extravagant in character, is imperfect in deſign, faint in expreſſion, and not ſufficiently vivid and glowing in the colouring. It does more honour to the candid and benevolent heart of M. SENNEBIER, than to the vigour of his pencil. He begins it by predicting, that both the enthuſiaſtic votaries of *Rouſſeau*, and his violent detractors, will be diſſatisfied with his account. *So much the better*, ſays he; *this diſſatisfaction will be a proof to me that I have hit upon the truth:* we verily believe that M. SENNEBIER has ſaid nothing but *the truth*, but we are as fully perſuaded that he has not ſaid the *whole truth*. It is impoſſible for a feeling mind to peruſe *Rouſſeau*'s CONFESSIONS, and to eſtimate his character from *his own* account of its degradations and contradictions, and *his own* panegyric on its comparative excellence, when conſidered with thoſe of the firſt worthies of the human race, without the ſtrongeſt emotions of one kind or another. For his character exhibits, after all, the ſtrangeſt and the moſt humiliating contraſts;—lively and ſublime moral feelings perpetually counteracted by imperious paſſions, a proud and preſumptuous ſelf-love, and a mean, ſuſpicious, and reſtleſs ſpirit; in a word, a motley aſſociation of the moſt elevated ſentiments with the loweſt propenſities, and the whole ſet in fermentation by a brain palpably *moon-ſtruck*, and heated to a certain degree of inſanity. It has been alleged, in favour of *Rouſſeau*, that his avowal of his vices proved him to be frank, candid, and ingenuous; but this apology requires modification; for there is a degree of frankneſs that ſavours of cynical indelicacy and impudence; and there are vices which ought to be rather wept over in private, than daringly expoſed to the eye of the Public, when their manifeſtation can anſwer no uſeful purpoſe, and is more adapted to diſguſt than to correct. As a writer, indeed, *Rouſſeau* ſoars in the higheſt claſs. In beauty, force, and originality of expreſſion he is truly great—and who ever painted the paſſions like him?

One of the laſt articles we find in this volume contains an account of the character, and the literary and theological labours of the Rev. M. *Charles Chais*, who died laſt year at the Hague,

in the eighty-fifth year of his age, and had been one of the paſtors of the French church there, from the year 1728. This eminent man, who aſſociated the labours of a ſtudious life with all the pleaſing and intereſting qualities that conſtitute an agreeable member of ſociety, was ſingularly reſpected by perſons of all ranks and ſtations. His knowledge was extenſive, and embraced a great variety of objects. His converſation was uncommonly pleaſing and inſtructive; his public diſcourſes were ſolid and judicious, animated with a grave, affecting, copious, and maſculine eloquence, and delivered with grace, dignity, and a remarkable energy that commanded attention, and made a general and powerful impreſſion. His commentary on the hiſtorical books of the Old Teſtament, of which the two laſt volumes are ſoon to be publiſhed, is a valuable compilation of the beſt Engliſh expoſitors, enriched with ingenious obſervations of his own, and the remarks of ſeveral modern writers and travellers, who have thrown light, by their diſcoveries, on many paſſages of the ſacred writings. M. *Chais*, who was one of the firſt and principal promoters of the ſalutary practice of inoculation in Holland, compoſed an excellent diſſertation on that ſubject; deſigned chiefly to remove the religious ſcruples that retarded its progreſs. This diſſertation is extant in the *Memoirs of the Society of Haarlem*, of which he was a member. His other productions are enumerated in the work before us; and his literary and paſtoral character, as drawn by M. SENNEBIER, entitles him to a very high rank among the divines of the preſent century.

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## ART. XXXVII.

*Della Patria*, &c. i. e. Concerning the Country in which the Arts of Deſign and Painting were firſt cultivated. By Count J. B. GHERARD D'ARCO, &c. 8vo. Cremona. 1785.

THE queſtion diſcuſſed in this learned and ingenious publication is by no means ſo *un*-important as it may ſeem at firſt ſight. It is connected with the riſe and progreſs of the fine arts, and thus belongs more or leſs directly to the hiſtory of the human mind; and its diſcuſſion, moreover, embraces ſeveral curious points of literature relative to the geography, hiſtory, and migrations of ancient tribes and peoples. In the ſolution of this queſtion, the noble Author maintains, in oppoſition to an ancient, and alſo a modern and prevalent opinion, that the cradle of the fine arts, under conſideration, was neither rocked in Egypt nor in Greece, but in his native Italy. This is a bold aſſertion; and what a legion of poets, philoſophers, virtuoſos, and philologiſts has he to combat before he can eſtabliſh it! *Horace* comes and tells him, that *conquered Greece captivated*, civilized *her fierce victors, and introduced the arts into ruſtic Latium. Winkelman*, and many others, relate the ſame ſtory; but our Author, little moved by this oppoſition, means to prove, that though in a

certain period of their hiſtory the Romans were, indeed, inſtructed in the arts by the people they had conquered, yet the latter had been their diſciples before they became their maſters.

There are, indeed, ſome ſpecious arguments that may be, and have been, produced in favour of *their* opinion, who think that the firſt introduction of the arts of *deſign* into Italy among the Hetrurians, is to be attributed to the Greeks. *Winkelman* refers it to the *Pelaſgi*, who, as he ſuppoſes, migrated from Greece at a very early period, in order to form ſettlements in Italy. But our Author arms himſelf with the authorities of Thucydides, Apollonius, Sophocles, and other ancient writers; and maintains that the *Pelaſgi* were not Greeks, but Hetrurians or Tyrrhenians, who, after many voyages, fixed for ſome time their reſidence in Greece (where they were always conſidered as ſtrangers), and afterward returned to Italy, whence they came. Several collateral circumſtances, which Count D'Arco is careful not to omit, tend to corroborate his hypotheſis. One is, the ſtate of navigation at the period when the Pelaſgi *came firſt*, according to Winkelman, or *returned*, according to our Author, into Italy: at that period, navigation, if it exiſted at all, was in its infancy in Greece; whereas it was then in a flouriſhing ſtate among the Hetrurians. At the ſame period alſo, the civil and political ſtate of Greece was nearly ſavage and barbarous, as our Author affirms on the credit of Thucydides, while ſeveral ancient writers make honourable mention of the political conſtitution of Hetruria. He obſerves farther, that the *Pelaſgi*, when they arrived in Greece, were in a manner held ſacred, on account of their extraordinary learning and knowledge, whereas their deſcendants, when they returned to Italy, were looked upon by their countrymen the Hetrurians as ignorant and unpoliſhed, becauſe they had not kept pace with the progreſſive improvement of the arts in their country, during their abſence.

*Strabo* makes mention indeed of certain Grecian colonies, who, about three centuries after the time of *Homer*, formed ſettlements in Italy, and built the cities of Spina and Ravenna; and this fact has been employed by *Winkelman* to confirm his hypotheſis; but our Author proves the tranſitory duration of theſe colonies, who were ſoon driven out of Italy by the Hetrurians. As to the *Auſonians*, they were originally a people of Liguria, who, about eighty years before the Trojan war, paſſed into Sicily, under a chief named *Siculus*, and thence into Greece; whence, as the *Pelaſgi* had done before them, they returned, after ſome generations, into their country, conducted by *Auſonius* *. It was after this epocha that certain Grecian colonies formed

* This is founded on the relation of Greek writers quoted by *Dionyſ. Halicar.*

ſettlements in the ſouthern parts of Italy, which were known under the denomination of *Magna Grecia*; to them therefore the introduction of the arts of *deſign* cannot, as our Author reaſons, be attributed, ſince they had been long before cultivated by the Hetrurians.

But if our Author's hypotheſis be the true one, how comes it that we find Greek letters, Grecian mythology, and even events of Grecian hiſtory, on the Hetrurian vaſes, urns, ſepulchral monuments, and other ancient remains? Our Author ſtruggles very learnedly with this objection; and he brings forth, with the aſſiſtance of *Mazzochi* (heavily loaded with Oriental and Grecian erudition), a copious variety of arguments and examples to remove it. There is ſome confuſion in the manner in which he employs this erudition; and a little more method and logic would have rendered his victory more evident and deciſive. However, he proves, with at leaſt a great degree of probability, ſome points which indeed ſeem to remove the objection: he ſhews that the Hetrurians and Greeks both derived their graphical or written characters from the Phenicians; the Hetrurians, firſt, in order of time, as they practiſed navigation and were a civilized people long before the Greeks; and this circumſtance accounts for the reſemblance which learned men have diſcovered (and perhaps exaggerated) between the Hetrurian and Grecian letters; a reſemblance which they have, according to our Author, erroneouſly employed to make us believe that the former were derived from the latter. He removes the objection brought from mythology, by obſerving that the Tuſcan divinities and heroes acquired the Grecian denominations in times poſterior to thoſe in which they were known and worſhipped in Hetruria, and he brings ſeveral remarkable examples, ſuch as the name of *Saturn*, the ſtories of the *Titans*, *Phaeton*, and *Tantalus*, to ſhew that the moſt ancient perſonages in Pagan mythology had an Italian origin. He obſerves, moreover, that the character and genius of the religion and ſacred rites of the Hetrurians announce the moſt remote antiquity, and that many of them, according to the expreſs affirmation of Plato *, were adopted in Greece. Herodotus is alſo brought in to prove the ſame thing; for he affirms that the Greeks took many of their religious ceremonies and divinities from the Pelaſgi, who, as we have ſeen above, paſſed originally from Hetruria into Greece, and afterwards returned into Italy. It is true, that a reſpectable number of learned men agree in conſidering the Achæans, Cretans, Lacedemonians, and other emigrants from Peloponneſus, as the founders of the greateſt part of the Hetrurian cities. But our Author does not think his opinion, concerning the point in

* *De Legibus.*

queſtion,

queſtion, at all affected by this argument, which M. *Villoiſon* has employed to prove that the Hetrurians derived the arts of *deſign* from the Greeks. Suppoſing theſe pretended emigrations to have been real, and not the fictions of Grecian vanity, which, on many occaſions, has made bold invaſions upon hiſtorical truth, in order to acquire the honour of a remote and ancient civilization, our Author thinks that *his* proofs of the *real* ancient civilization of the Hetrurians, and the flouriſhing ſtate of their marine before the name of Greece was known in hiſtory, are abundantly ſufficient to invalidate the concluſions drawn from theſe emigrations againſt his hypotheſis. This is the ſubſtance of the firſt chapter of the work before us.

In the ſecond, our Author, with a vaſt profuſion of real and extenſive learning, undertakes to prove, that Greece not only derived the arts of *deſign* from the Hetrurians, but that it was highly indebted to this ancient people for its progreſs in theſe arts. This tenet has ſtill more the appearance of a paradox than the former, and yet our Author has found out a method of rendering it plauſible. He ſets out by proving (as we may call it) *à priori*, that the Hetrurians *muſt* have made a more rapid progreſs than the Greeks, in the arts of *deſign*. Why? Becauſe on the ſpot where the firſt productions of an art appear, there is naturally to be expected the greateſt ſpirit of activity and ardour in cultivating, improving, and bringing it to perfection. But this metaphyſical argument is not deciſive; for the ſpirit of activity which is thus ſuppoſed to be animated by invention, may be counteracted by accidental circumſtances. *Winkelman* affirms, that the Hetrurians only carried the arts to a very limited and ſcanty degree of improvement and perfection, at which their progreſs ſtopped ſhort, like that of the Chineſe, who anticipated the Europeans in ſeveral diſcoveries, which they neither completed nor improved. He, indeed, alleges reaſons for this fact (if the fact be true), that are not more deciſive than thoſe brought by our Author to ſupport the other ſide of the queſtion. His reaſons are, 1ſt, the ſanguinary and gloomy character of the religious rites of the Hetrurians, and their propenſity to divination, which muſt have inſpired a melancholy frame and temper of mind, highly unfavourable to the culture and progreſs of the arts; 2dly, their continual wars with the Romans, which only ceaſed with their entire deſtruction as a people. This ſecond reaſon is abſurd in the extreme; ſince it is well known, or, at leaſt, is well proved, in the work before us, that the moſt refined period of the arts among the Hetrurians was ſome ages anterior to their wars with the Romans. To the firſt of theſe reaſons our Author objects, that the theogony and religious worſhip of the Hetrurians did not eſſentially differ from thoſe of the Greeks, and he makes ſeveral ingenious obſervations, which are

deſigned

deſigned to perſuade us that the ſanguinary and gloomy character, aſcribed by *Winkelman* to the Tuſcan rites, was adapted to inſpire a certain boldneſs and energy of mind, which, inſtead of being an obſtacle, is rather a powerful incentive to the cultivation and improvement of the arts. Theſe obſervations are more eſpecially juſt with reſpect to certain ſubjects that come within the ſphere of painting and ſculpture, we mean thoſe of the *terrible* kind; and they, no doubt, have an important place in the ſphere of the arts. Our Author even thinks that the beauties which are derived from this energy and elevation of mind are far from being inferior to thoſe which proceed from the ſmiles of the *Graces* upon an elegant fancy. We do not think that theſe different kinds of beauties ought to be appreciated by compariſon, becauſe their merits are entirely diſtinct and reſpective, like thoſe of *Fuſeli* and *Albano*. Our Author (if he dared to do ſo) might have combated *Winkelman*'s argument by a parallel caſe, which proves it inconcluſive; for what rites are more gloomy, and, in ſome reſpects, more ſanguinary, than the macerations, penances, flagellations, and other ſelf-tormenting means of appeaſing the Deity, the terrors of the inquiſition, and the cruel ſeverities of monaſtic diſcipline, that degraded the fair and benevolent aſpect of Chriſtianity, in Italy, in the 15th and 16th centuries? and yet it was in the midſt of this gloom that the arts came forth (one knows not how) with a ſingular aſpect of grace and grandeur, conducted by the *Da Vinci's*, the *Raphaels*, the *Corregios*, the *Guidos*, and even the Friar *Bartolomeo*. It is often the ill hap of our ingenious men to imagine connections in nature, which are contradicted by facts; and this happens, more eſpecially, when theſe connections are eſtabliſhed on partial views of the objects thus connected.

This was evidently the caſe of the ingenious Abbé *Winkelman*: he fixed his attention only on the inauſpicious influence which the gloomy theogony and rites of the Hetrurians may be ſuppoſed to have had, in oppoſing the progreſs and culture of the arts among them; and he did not conſider the *other* circumſtances in the character and ſituation of this people, that were adapted to counteract *this* influence, and to favour their improvement in the arts. Our Author avails himſelf of theſe; and it happens luckily for his argument, that the two circumſtances, which, according to *Winkelman*, contributed chiefly to the progreſs of the arts in Greece, were remarkably combined in Hetruria, *viz.* a mild and happy climate, and a ſuperior elegance of form and beauty of features that diſtinguiſhed the women of that country. To theſe circumſtances may be added the *love of muſic and poetry*, which, agreeably to the teſtimonies of all ancient records, reigned among the Hetrurians, and the *benign influence* of a *free government*, which, according to *Winkelman*, contributed ſo much

to

to the cultivation and progreſs of the arts in Greece. All theſe circumſtances combined ſeem to promiſe a complete victory to our Author, in this keen, dubious, and elegant conteſt.

The field, however, is not yet entirely gained; his adverſaries rally; and they are reinforced by two experienced and ſkilful combatants, the celebrated Count *Caylus*, and the learned and ingenious Profeſſor *Heyn*, of Gottingen; who affirm, poſitively, that the Hetrurians changed, and conſiderably improved, their ſtyle and manner of operating in the arts, after the period of their commerce and communication with the Greeks. Nothing can be more maſterly than our Author's manner of repelling this attack: it is here that his victory ſeems complete; and after putting his adverſaries in confuſion, by involving them in palpable anachroniſms and contradictions, he beats them fairly off the field. What, *ſays he*, was the period when the Greeks aroſe to reputation, and became deſervedly models to other nations? It was after the defeat of the Perſians, a period many ages poſterior to that when the arts, even according to the acknowledgment of Count *Caylus*, had riſen to their higheſt improvement among the Hetrurians, a period when this latter people were exhauſted, dejected, and degraded by the wars in which they had been ſo long engaged with the Gauls, the Romans, and the Samnites. *Winkelman* himſelf obſerved, in his hiſtory of the arts (and the obſervation beats down his hypotheſis about his ears), that the moſt brilliant era of the grandeur, tranquillity, and arts of the Hetrurians, muſt be placed ſoon after the Trojan war. Count *Caylus* alſo remarks (as imprudently for his cauſe), in ſeveral paſſages of his writings, not only that the maſterly productions of this people ſuppoſed neceſſarily their having a perfect knowledge of the arts, but that *(hear him!)* they were marked with *characters of originality*, which rendered it impoſſible to confound them with the productions of any other people. All this proves evidently, that it was at a period much poſterior to the era of the perfection of the arts among the Hetrurians, that this people borrowed any thing from the Greeks, who had been their diſciples long before they became their maſters.

Our Author not only repulſes his adverſaries in all their attacks, but he turns their own arms againſt them. If they avail themſelves of the multiplicity of different *ſtyles* and *manners* obſervable in the works of Hetrurian arts, to ſupport their hypotheſis, he very ingeniouſly ſhews, that an invincible argument is deducible from this very circumſtance in favour of the remote antiquity of the arts in Hetruria, of their deriving their origin from that country, and of their having been carried on there during a long ſeries of ages. From the circumſtance alſo of the arts ſtarting up in Greece all at once, of their having been carried to perfection in a very ſhort time, and declining ſoon after the death

death of Alexander, he concludes, that the Greeks derived them from the Hetrurians: for, *ſays he*, it is only by a ſlow and gradual progreſs that the arts can be brought to any high degree of improvement and elegance; ſo that when their progreſs is rapid, and they come ſuddenly to perfection in any country, this muſt be owing to ſome happy incident, ſuch as the view of excellent models, furniſhed by ſome other nations, where they had been anteriorly cultivated with ſucceſs, and brought to a high degree of improvement. It was thus that, at the revival of the arts in Italy in the 15th century, the genius of *Raphael*, receiving a kind of inſpiration from the contemplation and ſtudy of the graceful and majeſtic remains of ancient ſculpture, ſo rapidly ſoared to perfection.

What this good reaſoning is meant to prove, is farther confirmed by an appeal to facts. Our Author obſerves, that in the productions, ſtill remaining, of the moſt brilliant period of the arts in Greece, an unprejudiced eye, directed by competent knowledge, will eaſily perceive, that the Grecian artiſts have imitated the ſtyle, and even borrowed the *coſtume* of the Hetrurians of the earlieſt ages. This fact our Author proves by many examples that give it, at leaſt, the very higheſt degree of probability. He points out the ſtriking conformity between the ſculptures of *Phidias*, and thoſe that are obſervable on the Hetrurian vaſes, and other ancient monuments. He finds the *Doric* capital in ſeveral Tuſcan remains, that are palpably anterior to the progreſs of the arts, and even to their birth, in Greece. For theſe, and many other details of a ſimilar kind, which deſerve the attention of the antiquary and the artiſt, we refer them to the work of our very learned and ingenious Author; who concludes his ſecond chapter with this obſervation, that it is often difficult to diſtinguiſh the productions of Hetrurian art, from thoſe of the firſt periods of the arts in Greece, on account of their reſemblance to each other, and (which is ſtill more remarkable) that ſeveral pieces of ſculpture, diſcovered in later times in Tuſcany, reſemble the productions of Greece in the moſt improved period of the arts in that country.

Our Author diſplays a great fund of geographical and topographical knowledge in his third and laſt chapter, which is deſigned to prove, that the ſeat and center of the fine arts in Italy, in the remoteſt times, was the city of *Mantua*; but here we ſhall leave him in the place of his nativity, after thanking him cordially for the agreeable entertainment and real inſtruction we have received from his learned, elegant, and ingenious work.

ART.

## ART. XXXVIII.

*Voellig Entdecktes*, &c. i. e. The Secrets of Nature revealed, both with reſpect to the Work of Generation, and the Method of accompliſhing the Deſire of the Parents with reſpect to the Sex of their Offſpring. By M. JOHN CHRISTIAN HENCKE, Organiſt of the Church of Hildeſheim. 8vo. Brunſwick. 1786.

AFTER a laugh, or at leaſt a ſmile, which will naturally be excited by the contraſt that there is between the title of this work and the profeſſion of its Author, we ſuppoſe that many of our readers will expect, from this title, a waggiſh publication. If it had been ſuch, we ſhould not have announced it; that it is not ſuch we immediately preſumed from even the liſt of ſubſcribers that is prefixed to the work, among which we find no leſs than *ſixteen German univerſities*. On examining the work, we perceived that it was a very *ſerious* buſineſs on the part of our organiſt, and that it is by no means his deſign to put us off with a jig, a *canoni*, or a hornpipe. With reſpect to his diſcovery of the ſecret of Dame Nature, we ſhall leave it where we have found it, becauſe, of whatever conſequence it may be, we cannot draw it forth to view without ſullying our page and our fingers. We have, however, been induced to announce the work for the ſake of anatomical connoiſſeurs, though, if we are not miſtaken, there are obſervations upon record that ſtrike at the foundation of our Author's ſyſtem; a great part of which, beſide, is not new.

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## ART. XXXIX.

*Winke*, &c. i. e. Advice to good Princes, to thoſe who are charged with the Education of Princes, and to the Friends of the People. By M. EHLERS, Profeſſor of Law. 8vo. Keil. 1786.

THERE is a great quantity of good advice in the five diſſertations that compoſe this volume, and the ſubjects diſcuſſed in them are by no means trite or vulgar. The curious queſtion, how far it is adviſable to carry the inſtruction of the people, and in what reſpects their being well informed is uſeful and expedient? is the ſubject of the *firſt* diſſertation. The *ſecond* treats of ſeveral dangerous conſequences that may ariſe from ſome inconſiderate regulations that have taken place in the Greek Church, and in ſome Proteſtant Churches in Germany, with reſpect to *toleration*. It is well known, that the extraordinary privileges and advantages that have been granted to the ex-Jeſuits by the Empreſs of Ruſſia, have proved favourable to the introduction of the Roman Catholic belief and worſhip into ſeveral places where they were before unknown. The ſame effect has been produced, though in a leſs degree, by the unmodified liberty of public worſhip, and even the privilege of eſtabliſhing

bliſhing *miſſions*, that have been granted to the *Romaniſts* in ſome Proteſtant ſtates. The learned and judicious Profeſſor expoſes the inconveniences of theſe meaſures with a public-ſpirited zeal, that is by no means unaccompanied with knowledge and charity. The ſubject is delicate, as every plan of preſcribing limits to toleration requires the acuteneſs of a clear head, joined to the liberal feelings of a generous and benevolent heart. If the Roman Catholic ſyſtem (and we may form hopes that ſuch a revolution is beginning to dawn) could be diveſted of the lordly ſpirit of deſpotiſm, and the wicked ſpirit of perſecution and intolerance that has been blended and identified with its very eſſence, through a long courſe of ages, the ſubject of toleration would be no more a matter of diſcuſſion; all difficulties would vaniſh. Our Author is a perfect maſter of this ſubject, which is connected with that of his *third* diſſertation. In this, to prevent the introduction of ſuch religious doctrines as may be pernicious to the well-being of the ſtate, he produces a confeſſion of faith, which, he thinks, ought to be adopted by perſons of all communions who ſettle in any country, and claim a toleration and the free exerciſe of their religious worſhip. This confeſſion is formed upon a large and liberal plan, and excludes none from the rights and privileges of citizens, who embrace thoſe great truths of natural religion, which are connected with the eſſential intereſts and well-being of civil ſociety; ſome of its articles are, however, ambiguouſly expreſſed, ſo as to be in the interpretation ſuſceptible of a degree of latitude that might defeat the end for which it is propoſed. As to Atheiſts, even *they* are deemed by our Author objects of toleration, provided they neither propagate their opinions in converſation nor in their writings, nor form themſelves into ſeparate ſects and communities, nor combat the doctrines that are generally received. The ſame ſubject is continued in the *fourth* diſſertation, in which the Author gives us another form of a general confeſſion of faith, and ſays many ſhrewd things on the expediency and utility of ſuch forms and confeſſions. The *fifth* and concluding diſſertation of this volume, contains the principles and maxims that ought to determine the degree of toleration, that may be granted to the ſocieties which are diſtinguiſhed by the denomination of religious orders. This ſubject, which the preſent criſis of eccleſiaſtical and monaſtic polity in the empire and elſewhere renders ſeaſonable and intereſting, is diſcuſſed by the acute and judicious Author with the moſt candid impartiality.

Another volume of our Profeſſor's *good advice* is promiſed; and thoſe who have read this, expect it with a degree of impatience that does him honour and juſtice.

ART.

## ART. XL.

*Urſprung*, &c. i. e. On the Nature and Progreſs of Science, of Writing, and of a Sacred Language among the firſt Inhabitants of the World. or, an Explication of the Fables and obſcure Traditions concerning *Adam*, *Seth*, *Enoch*, *Noah*, *Abraham*, *Joſeph*, and *Moſes*, deſigned to illuſtrate ſeveral important Symbols, and myſterious Doctrines, both of ancient and modern Times. 8vo. Breſlau. 1786.

THE diſcoveries made by the learned Author, in this inveſtigation, do not ſeem to repay the labour and erudition they have coſt him, by their merit and importance. He points out to us, indeed, certain epochas, in which ancient hiſtorical records were ſymbolically interpreted; but he does not carry us back to the ſource, nor ſhew us how they were underſtood by thoſe from whoſe primitive relations they were tranſmitted down from age to age. He throws, it is true, ſome new rays of critical light upon the Kabaliſtic fables; and this will be probably conſidered as the moſt intereſting part of his work, at leaſt by the philologiſts.

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## ART. XLI.

GEORGII RUDOLPHI BOHMERI *Commentatio Phyſico-botanica de Plantarum Semine*, i. e. A Phyſico-botanical Diſſertation concerning the Seed of Plants. By M. Geo. R. BOHMER. Wittemberg. 1785. 8vo.

ALL that has been ſaid by ancient and modern authors on the ſubject here announced, is compendiouſly contained in the compaſs of 390 pages of this judicious work. We ſay *judicious*; for M. BOHMER is not one of thoſe compilers and bookmakers, who need no more than a pair of ſciſſars to furniſh us with heavy, voluminous, folio publications. He compares, appreciates, and often rectifies the obſervations of the authors which he has here collected concerning the germination and duration of ſeed, the manner of augmenting their fecundity, and many other objects relative to this branch of botany and natural hiſtory. He has alſo ſubjoined to this work, a curious *Diſſertation* concerning the cellular tiſſue of vegetables.

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## ART. XLII.

*Avis au Public*, i. e. An Advertiſement addreſſed to the Public. By M. PALLAS, Member of the Imperial Academy of Peterſburg. 1786.

THIS eminent Naturaliſt, already ſo well known by his celebrated voyages and learned publications, announces here a vaſt and arduous deſign conceived by the Empreſs of Ruſſia, the execution of which is undertaken by her order. This illuſtrious Princeſs is always aiming at great things. Her plans of empire, of commerce, of civilization, and literary improvement,

ment, are all formed upon a grand ſcale. She has extended her dominions from the Frozen Ocean to the borders of the Euxine, and ſeems to ſtand there on her tiptoe, ready to ſtep over to the other ſide. How many languages are ſpoken under her ſceptre? This queſtion brings us to the ſubject of M. Pallas's *advertiſement*, which is the publication of an *Univerſal and comparative Gloſſary of all Languages*, under the auſpicious protection and encouragement of CATHARINE II. The Ruſſian empire can reckon within its boundaries above a third of the languages that are ſpoken on the ſurface of our globe, and a great number, with which even the learned are hitherto unacquainted. Within the narrow diſtrict of *Caucaſus*, which is inhabited by ſeveral ſmall nations, eight or nine languages, and twenty-two dialects, are ſpoken. In Siberia, the languages and dialects are ſtill more numerous, and Kamſchatka furniſhes nine dialects of three different languages. Thoſe who are charged with the execution of this immenſe plan have begun their work, and the languages and idioms of the Ruſſian empire are the firſt objects of their inquiries. Among other things, we are told that the true pronunciation of the words will be indicated and expreſſed in this gloſſary, with the utmoſt accuracy and certainty (which is no eaſy matter), and that a preliminary diſcourſe concerning the languages, and their filiations, analogies, and affinities, will be prefixed to this GREAT WORK.

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## ART. XLIII.

*Natur-Hiſtoriche Brieſe*, &c. i. e. Letters concerning the Natural Hiſtory of Auſtria, Saltzburg, Paſſau, and the adjacent Provinces. By M. PAUL SCHRANK. 2 Vols. 8vo. 1785.

THESE letters are agreeably written, and contain excellent obſervations on the natural productions and riches of countries little known, even with reſpect to the manners and cuſtoms of their inhabitants.

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## ART. XLIV.

*Uber de enſtehung des Nordlichts*, &c. i. e. Concerning the Origin of the *Aurora Borealis*, or Northern Lights. By M. J. ANTHONY CRAMER, Profeſſor of Mathematics in the Ducal College of Hildeſheim. 8vo. Bremen. 1786.

IT is in the phlogiſton, collected about the pole, that M. CRAMER thinks he has perceived the true cauſe of the *Aurora Borealis*; of which he explains all the phenomena in, at leaſt, a probable manner, on this principle.

— all by M—e; except art. 35.

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— 368, in the last line of Matthews's Article, for 'veracity,' r. *truth.*
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